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Marxism Today

EDITORIAL COMMENTS

E. H. S. BURHOP — THE SOVIET MAN IN SPACE

JACK WODDIS — LESSONS OF THE CONGO

ALAN G. MORTON — RECENT ADVANCES IN BIOLOGY

P. S. ROMASHKIN — LEGAL PROBLEMS INVOLVED IN PEACEFUL USES OF ATOMIC ENERGY

JACK LINDSAY — AUSTRALIAN WORKING-CLASS HISTORY

JACK MITCHELL — THE RAGGED TROUSERED PHILANTHROPISTS

DISCUSSION: KARL SACHER — ON HOW DID MAN ORIGINATE?

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Marxism Today

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CONTENTS

		page
	Editorial Comments	129
E. H. S. BURHOP	**The Soviet Man in Space** ... Examines the significance of the Soviet achievement and its lessons	134
Jack WODDIS	**Lessons of the Congo** ... ... Discusses the United Nations' actions in the Congo and what made them possible	136
Alan G. MORTON	**Recent Advances in Biology** ... Discusses new discoveries in regard to the nature of living matter and its interchange with the environment	140
P. S. ROMASHKIN	**Legal Problems Involved in Peaceful Uses of Atomic Energy** ... ... Examines existing international law in relation to weapons of mass destruction and the standards of protection required for peaceful uses of atomic energy	143
Jack LINDSAY	**Australian Working-Class History** ... ... Reviews a new study of the Australian Labour movement	151
Jack MITCHELL	**The Ragged Trousered Philanthropists** ... ... Discusses what was new about this book and its contribution to a socialist working-class culture.	154
DISCUSSION: Karl SACHER	**On How did Man Originate?** ...	160

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Editorial Comments

THE recent Congress of the Communist Party concerned itself with the growing monopolisation of British industry and demanded that it be exposed. It favoured "legislation against all monopoly practices, including take-over bids and mergers, thus preparing the ground for the nationalisation of monopolies".

A Board of Trade study of 1,917 companies "*Company Assets and Income in* 1957" enables us to study in a rough and ready fashion the degree of monopolisation existing in that year. What, however, has happened in the interval? How far have mergers concentrated power into fewer hands? This is not easy to answer. It is not enough to spotlight the merger. It is also necessary to estimate to what extent an entire industry has grown. Only then can we fully grasp how far mergers have concentrated power in that industry. This is a task which will take a long time.

The *Financial Times* has, however, attempted to give an approximate idea. It has drawn up tables to show how far industry was concentrated in 1954, and how far it would have been concentrated at that date if the mergers which have taken place since that date had already taken place. This method gives a very rough and ready idea of the degree of concentration and the extent to which it has grown in recent years. The first column in the following table gives the degree of concentration that existed in 1954. The second gives the degree of concentration that would have existed had the recent mergers already taken place at that date. The table discloses, on this basis, what proportion of the assets of a given industrial group are held by the top ten companies in that group. We have rearranged the table to place the various industrial groups in their order of concentration.

	Per cent	*Per cent*
Chemicals	81	84
Retail companies	69	78
Entertainments	74	74
Textiles	62	71
Metal manufacture	62	69
Paper, printing	60	67
Other metals	62	66
Vehicles	58	65
Leather and Timber	63	65
Clothing	45	64
Food	61	64
Drink	54	64
Engineering	56	59
Transport (commercial)	57	58
Bricks	54	55
Wholesalers	40	43
Construction	33	33

The main surprises in the above table are the comparatively small degree of concentration in engineering (where there are many specialist small companies) and the high degree in textiles. The top ten in chemicals control the greatest amount of assets, the top ten in metal manufacture are second and in engineering and electrical goods they are third.

The *Financial Times* (April 7th) estimates that mergers and take-over bids in 1960 amounted to £617 million. The first six groups for bids and mergers were Drink £102 million, Engineering £76 million, Finance £65 million, Electrical goods £64 million, Paper and Printing £54 million, Chemicals £52 million.

Concentration is speeding up in 1960. In the first quarter, bids and mergers covered assets of £427 million. Even when we subtract the American Ford Corporation's take-over of Fords in Britain, which amounted to £129 million, the other successful bids in the first quarter of 1961 were £100 million greater than in the same period of 1960. Apart from Fords the 1961 mergers were led by Finance £60 million, Paper and Printing £40 million, Property £35 million, Textiles and Clothing £30 million, Chemicals £27 million and Drink £22 million. There is no doubt whatever that the process of concentration is going ahead with increasing vigour.

Hit with a Feather

Faced with mergers and take-over bids *The Times Review of Industry* has been wondering what to do about them and has asked an economist, a lawyer and three politicians. The economist, Professor B. S. Yamey, dealing with the argument that pressure of public opinion and fear of government intervention may influence the behaviour of monopolies and dominant firms, is of the opinion that this pressure could be very much weaker than competition would be. The professor might have noted how the monopolies, by expensive advertisements in all the larger newspapers, extolling the virtues of the large firms in steel, chemicals, oil refining etc., are seeking to create a public

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opinion in their own favour. The remedies proposed by the three politicians are so similar that it would almost seem as if the three larger political parties were agreed that Britain's powerful monopolies must not be hit with anything heavier than a feather. All are agreed that the Restrictive Practices Court, by making price-fixing agreements between independent firms more difficult, is in fact encouraging such firms to merge.

The Conservative, Mr. Robert Carr, M.P., and the Liberal, Mr. Jo Grimond, M.P., suggest that the work of the Monopolies Commission should be speeded up and that all proposed mergers should be examined and sanctioned by it. The Labour M.P., Mr. Douglas Jay, suggests that the Board of Trade should deal with such questions. Mr. Grimond further suggests that where an industry is strangled by monopoly practices, the Government should have powers to finance new firms (presumably private ones) in competition with the existing firms. Mr. Jay, revising socialist doctrine as usual, tells us: "You can best sum up briefly the socialist view on monopolies as follows: that where there is monopoly there should be public ownership, and where there is private ownership there should be competition." This looks promising until Mr. Jay goes on to argue that there are no actual monopolies, but only degrees of monopoly within a given industry. So he refrains from advocating any specific public ownership.

The symposium illustrates two things; the unwillingness of the larger political parties to tackle or even expose the monopolies, and the feebleness of the existing state machinery investigating their activities.

The monopolies will continue to sit pretty and complacently until the British people demand more effective scrutiny and exposure of all their activities with a view to their nationalisation.

Archive problems

Those who would preserve works of art and historical records have always had on their hands a twin battle—against "natural causes" and against vandals. The oil painting may crack, or like Leonardo's *Last Supper* in Milan may flake due to the fumes from the dung of Napoleon's horses, stabled there during the campaign of 1800. It has been normal practice for invading generals to seize works of art as spoils of war. Fortunately, scientific methods can arrest natural deterioration, and, in such cases as the Dead Sea Scrolls, can work miracles of restoration.

With the advent of printing further problems arose. In Britain every publication is supposed by law to be sent to the British Museum, and, in Bloomsbury and Colindale, there are vast archives on which historians and others can now draw.

The newer arts—cinema and television—have similar problems. Until some ten years ago, all cinema films (though not prints for home movie showing) were on highly inflammable cellulose nitrate-based stock; fire regulations for vaults were rightly rigorous, which made storage expensive, but even more serious was the fact that this nitrate film is chemically unstable and liable spontaneously to deteriorate after some years' time. Archives such as the National Film Archive here, which is under the banner of the British Film Institute, and the Cinémathèque in France, have nobly tried to preserve some of the screen's classics as well as newsreels of historical value. Since the advent of "non-flam" cellulose acetate base, their tasks have been lightened, even though the cost of copying nitrate films on to acetate before they disintegrate imposes financial limitations. However, a new difficulty has now arisen. When the rights of the story, from which a film classic has been made, are sold for a re-make, the producer of the re-make may try to insist that the original negative and all copies of the first version are destroyed. Public outcry has often saved the day.

The Annual General Conference of the Association of Cinematograph, Television and Allied Technicians in March drew attention to a threat to the Marcel Pagnol trilogy and instructed its General Council to set up a Committee "to investigate the whole question of the destruction of noted films . . . with a view to these films remaining in the archives and not being lost to the public". This move from the Union's film producer and film director members was embodied in a resolution carried unanimously by the delegates who represent a very wide variety of entertainment workers, from door keepers at film-processing laboratories to screen-writers and electronic engineers.

The modern vandals received a trouncing, but if further steps are to succeed in preserving the best of the prolific film industries of the world, the nations will have to shoulder the financial responsibility. A further problem was opened up by Ivor Montagu in supporting the resolution. He suggested that the archive should be extended to TV though "it might seem strange to claim that for television there are works to be preserved". It has long been understood that our social habits are both mirrored and moulded by the cinema. The value of even the silent film for creating desires amongst the audiences was realised already

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by President Woodrow Wilson, when he said in 1919 "trade follows the film".

Now in the era of the Pilkington Committee there can be few people who do not know of the tremendous social effects of TV in addition to the cinema. So, quite apart from the need to preserve films and TV programmes of artistic merit, the historians of the future will curse us loud and clear if adequate steps are not taken to keep some samples, at least, of these not-so-hidden modern persuaders. Because of its vastness, the responsibility will have to be tackled—financially and technically—at national level.

The "Unpleasantness" of Truth

The cultural critics who write for serious newspapers and journals provide so much that is valuable and stimulating that we sometimes forget the basic prejudices from which they—or nearly all of them—work.

Thus, the film critic of *The Guardian* (25.3.61) wrote on "Stars," a film produced jointly by the East Germans and Bulgarians:

> "Its sponsors and makers being who they are, no one would expect this to be a film untainted by propaganda; and, of course, it does maintain a line of political indoctrination by its presentation of detestable Hitlerian Germans and of doomed Jews from Greece northwards bound for Auschwitz, and by its tribute to the Bulgarian partisans. Such things were only to be expected."

True the review goes on to give the film very high praise indeed: but what a state of mind these patronising lines reveal! For they seem really to think that to avoid the "taint of propaganda" Hitlerian Germans, taking innocent people to their incinerator death, should be shown as gentle and kindly; and the Jews on their last journey should forget that they are doomed.

Such a basis of assumption tends to destroy criticism, because it would rule out any work of art which deals with the basic issue of our time, from telling the truth about it, and art cannot flourish on gross falsehood and distortion.

Another vivid example was the treatment meted out to Alan Bush's opera *Men of Blackmoor* after its performance at Oxford last November. Various points were made about the music and the performance, but in every case the basic, possibly unconscious approach, was: "This opera is about a strike. Good operas cannot deal with strikes, therefore . . ." This was supplemented by the theory that artists of the left are not interested in people. Thus it came about that stock criticisms about lack of characterisation were levelled at a work which was outstandingly successful in dealing with the effect of a strike on at least five well-established and differentiated characters.

Art, Politics and Beethoven

There will be controversy for some time over the work produced by Alan Bush and Hugh McDiarmid to celebrate the Communist Party's Fortieth Anniversary, which was first performed at the recent Party Congress Concert. The text had some passages very close to the Statement of the Eighty-One Communist Parties, and one of the points which is being discussed is whether and how far political writings should be used in a work of art or entertainment—an important question, well deserving examination.

By an odd coincidence, a little-known work of Beethoven was performed at the Royal Festival Hall by the B.B.C. a few days later—a cantata for orchestra, chorus, children's chorus and four soloists called *The Glorious Moment*. The "moment" was the Congress of Vienna after the defeat of Napoleon in 1814; and the subject of the work, the hopes, not only for peace after the years of devastating war, but for human freedom and equality.

The words were especially written by Beethoven's friend and admirer, Dr. Weissenbach. The version used has been somewhat adapted and modernised by the eminent German conductor, Scherchen, but it is none the less quite clear that Beethoven was setting in music something very like a political peace manifesto. In his better-known works, such as the Ninth Symphony and the Missa Solemnis, the social and political content demand some search and interpretation, but here it is open and explicit. The words, for instance:

> "Gory militarism, get you gone"
> "Fall down upon your knees
> And swear to me aloud
> That you will never again support war" . . .
> "As you kept faith in hard times
> So you will shape the new world."

show the extremely political approach. The final chorus has sections for the children, the women, the men, before combining in the final triumph.

The work has moments of the highest inspiration, though not consistently equal to the Mass and the Choral Symphony; and all through it is a splendid and inspiring work. It is hardly ever performed, and practically unknown to the critics. Perhaps this can be attributed to its extraordinary sharp and explicit political content.

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Communist Artists and Musicians Discuss

The problem of art and politics was also under discussion at a joint meeting of the Artists' and Music Groups of the Communist Party on March 26th, under the title "Politics and the Artist." Seventy-nine people attended and many contributed to the discussion, opened by a painter, a dramatist and a composer, under the Chairmanship of Barbara Niven.

The discussion touched upon a wide range of problems, such as the isolation of the artist from the working class, the language that the artist could use to overcome this isolation, what impels the artist to create, the need for art to be "committed" or "engaged", formalism, socialist realism, the place of epic and lesser forms of art, Courbet's *Apples*, decadence and Harold Pinter's *The Caretaker* as an example of this and why, education of the artist and the public and, somewhat unexpectedly, miracles.

There was a unanimity that artists must consciously serve life and not death and express themselves in an intelligible way. Opposing points of view were expressed on how artists can best defeat their isolation, from the general public as well as from the working class. It was suggested that in our contradictory society there were different groups among the public for art and that it was not to be expected that any one single work of art should necessarily be directed to every possible type of consumer; recognition of this fact would open the way to a broad range of style in artistic creation, provided the intention behind the work was "to help the all-round development of the people and enrich their lives and leisure, to enable them to go forward swiftly and with certainty to the building and enjoyment of a new life", to quote from *The British Road to Socialism*.

One concrete point which was agreed unanimously was the immediate and vigorous support of Arnold Wesker's proposals, which were carried in resolution form (Resolution 42) at the last Trades Union Congress.

Welcome News

Readers will be interested to know that Arnold Wesker's *Roots* has now been produced in Czechoslovakia. The first performance was given on March 4th at the South Bohemian Theatre in Ceské Budejovice, known already before the war as an *avant garde* progressive theatre. *Roots* has also been presented in the Moravian town of Olomouc.

Another welcome event on the cultural front was the Seventh Arts Festival organised by the Metropolitan Borough of St. Pancras, which finished on March 25th, having lasted exactly one month. It included professional performances of opera, symphony music, ballet, poetry and drama, art and folk music exhibitions, and amateur dramatic and musical performances. The Royal Academy of Dramatic Art rubbed shoulders with Unity Theatre, high-powered professional opera singers and conductors with amateur choirs, including the W.M.A. singers and the London Youth Choir. The programmes ranged from a comic opera of Verdi, never previously performed in Britain, to Gorky's *Lower Depths*.

This festival was an outstanding example of the activity of a local authority operating the 6d. rate.

It pays to Advertise

The effect of advertising, especially of the I.T.V. "commercials", on our social and political life, was discussed recently in an interesting talk on the Third Programme, later reprinted in *The Listener* (March 16th, 1961). It was by Mr. Frank Whitehead and entitled "Advertising and Our Lives". This is a most topical question in view of the establishment of the Pilkington Committee on Broadcasting.

Mr. Whitehead says much that is of value. He draws attention to the increasing tendency of big business to use advertising and the mass media for political purposes and he gives some revealing figures. The Conservative Party between June 1957 and September 1959—"are estimated to have spent nearly £500,000 on press and poster advertising alone. David Butler and Richard Rose have estimated, moreover, that during the same period another £1,500,000 was spent by organisations of employers and industrialists on an anti-nationalisation campaign whose effect cannot have been other than to influence votes as well as voices."

Thus two million pounds at least were spent on behalf of capitalism before the election, not one penny piece of which appeared in election expenses. Mr. Whitehead does not, however, mention that such massive expenditure on political advertising is only open to the rich in the "free society" which he alleges exists in Britain today.

But it is with television advertising that he is mainly concerned, the effects of which he describes as follows:

> " . . . an unplanned but apparently inescapable tendency to promote in large masses of the population a condition of political apathy and social inertia . . . on any but the shortest of

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> short-term views the engineering of consent can be relied on to breed apathy and a feeling of impotence, at first baffled, ultimately resentful."

What then is to be done? Here Mr. Whitehead reveals himself as the prisoner of his own political preconceptions. He states:

> " . . . as soon as we start to look for remedies we realise that one solution we dare not contemplate is that of direct social control of the mass persuaders . . . " for " . . . no sane person would wish to exchange the anarchic, mass, *self*-hypnotism of our own free society for the centralised intellectual bondage of the totalitarian state" [our emphasis].

From this it can be seen that Mr. Whitehead is indulging in a little self-hypnosis himself. For all his acute comments on the harmful social and political effects of advertising, and especially of television, he obviously regards them as existing in a complete social vacuum. As can be seen, his whole approach is non-class and non-political. For him, the mass media exist in total isolation from British society, from its class structure and conflicts. No one would dream that the mass media were owned and controlled by a particular group and run with the idea of imposing a particular kind of "intellectual bondage" on "large masses of the people". This leads Mr. Whitehead to the supremely naive conclusion (to put it mildly) that the deliberate indoctrination and conditioning of people's minds in a consistently reactionary, anti-Communist, anti-Soviet, "cold war" mould, undertaken by both B.B.C. and I.T.V., is accidental. It is "unplanned" and a reflection of "self-hypnosis".

He never asks himself any of the following questions: *Why* do sound broadcasting and TV have the effects he describes? In whose interests is it that in this age of the H-bomb, of universal social and political change, of the crying need to change Britain's home and foreign policy if the British people are to survive, the mass media produce feelings of "apathy," "inertia," "impotence," bafflement, etc., amongst large masses of the people? Who runs both B.B.C. and I.T.V.? How, and for what purposes? How "free" are large masses of the population to see and hear minority views, especially left-wing and communist views, on radio and TV? What popular control exists over what is transmitted? If Mr. Whitehead had posed—and attempted to answer—these questions he would undoubtedly have received a little education into the real nature of our "free society." Had he read the evidence submitted by the Communist Party to the Pilkington Committee (see *Marxism Today*, March 1961) he would have been much enlightened as to the real nature, structure and control of broadcasting and television in Britain today.

Man and Town

The latest issue of *Recherches Internationales* is entitled *Man and Town* (*L'Homme et la Ville*). *Recherches Internationales*, as we have already announced, is published in Paris, and each issue is devoted to a single subject. It is composed not of original articles, but of articles, sections of books, etc., taken from the Marxist press of different countries.

The present issue is a double number of nearly 200 pages on a most important, fascinating and topical subject. It is written by Marxist architects, town planners, historians and sociologists from many different countries, and the contributions include essays on "The Origins and Genesis of Towns", "The Construction of new living quarters in France", "Problems of Urbanism in tropical Africa", "Construction and Reconstruction in China", "The new residential areas of Moscow", "Russian 'satellite' towns", "The 'Science City' of Novosibirsk" and a fascinating Soviet study on "Towns of the Communist future".

This is a thoroughly absorbing symposium that takes you from the first origin of cities through the problems of city building and planning under both capitalism and socialism, right into the vista of the city under communism.

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The Soviet Man in Space

E. H. S. Burhop

ANOTHER glorious page in the story of man's ceaseless struggle to break through restraints imposed by his environment has been written. April 12th, 1961, the day when for the first time in human history man left the surface of the earth and its atmosphere, will surely be remembered as one of the great decisive dates of history; and the name of Yuri Gagarin will be known down the centuries when the memory of most of those lesser figures who today wield great temporal power will have faded into the limbo.

The entry of man into space represents one of the greatest feats of scientific organisation, a supreme example of the power of the scientific method to use a profound understanding of nature to find a way around apparently insurmountable obstacles imposed by natural law itself. Above all, it is an outstanding triumph for Soviet science, a complete justification for the faith in science of Lenin and his colleagues in the C.P.S.U. who, even in the darkest days of the Intervention when their country was being ravaged by foreign armies, stricken by famine, and with its very existence threatened, laid the foundations for a scientific education not limited to a small élite but embracing the whole people.

The possibility of manned space flight has excited the imagination of all kinds of people in all countries. To the scientist, however, it is of particular significance since it opens up exciting new vistas for the study of nature which, only a few years ago, appeared entirely beyond our reach. Indeed, so great have seemed the difficulties of manned space flight to certain British and American space scientists, and so striking the possibilities of making observations of great significance using instruments controlled from the earth in unmanned vehicles, that some of them have envisaged a space research programme relying only on unmanned vehicles. The astonishing photographs of the far side of the moon taken from Lunik II, automatically processed in the space ship and transmitted back to earth, shows what can be done in this direction.

With a maximum pay-load of about a ton, which seems the present American limit, the observer would not be worth his weight in instruments. There is no point in making a virtue of this necessity, however. The Soviet space ships have pay-loads of four or five tons, and in this case there is no question that the inclusion of a human observer enormously widens the scope and accuracy of the measurements that are feasible.

Of greatest value will be the possibility of observing the cosmos using radiations of all wavelengths. For thousands of years our astronomical studies were all made using radiations over a comparatively narrow band of wavelengths in the visible region of the spectrum and, more recently, extending a little way either side into the ultra-violet and infra-red regions. Since the end of the last war the science of radio-astronomy has been developed and we have been studying celestial objects through the long wavelength electromagnetic waves they give out. Already some very exciting things have been discovered. Many new celestial objects have been found. These have thrown fresh light on the way the Universe originated and provided the basis of the recent public controversy between Fred Hoyle and Martin Ryle.

Celestial bodies, however, emit radiation over a very much wider band of wavelengths than those used so far. From the very shortest wavelength X-rays to the ultra-violet side of the visible spectrum is a vast region of radiation which cannot be studied on the surface of the earth since our atmosphere is opaque to these radiations. A permanent observatory on the surface of the moon would provide the most effective means of carrying out observations in X-ray and ultra-violet astronomy. The development of space ships to carry men makes it possible to envisage setting up such an observatory.

The study of the moon itself, its physical features and its mineral wealth, will be an exciting immediate scientific objective for putting men on to the moon. There seems now a very real possibility of seeing these questions answered within the next five years or so.

The Nearer Planets

Reaching out further into space we can expect a tremendous effort to discover more about the nearer planets, Mars and Venus. There will undoubtedly be many more unmanned probes containing instruments capable of transmitting photographs back to earth. What lies under the cloud-cover of Venus? What is the nature of the "canals" on Mars? These are some of the questions to which we may expect an answer before too many years.

Interplanetary manned space travel seems to present problems of quite a different order of complexity from those already overcome. The journey to the moon will occupy a few days and is something that can be contemplated. The journey to Venus or Mars would last several months and would constitute an epic test of endurance that it may be possible

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to contemplate only when a space ship of a size vastly larger than any so far envisaged becomes practicable. Alternatively, the time taken may be reduced by arranging for a substantial increase of the speed of the space ship. Nevertheless, who can doubt that the problem of interplanetary manned flight will also be solved and not in the too remote future?

A study of the surface of the planets Mars or Venus might provide information of the utmost importance about the way in which life began. Since life originated on earth perhaps some 2,000 million years ago, the physical conditions have changed enormously. All traces of the earliest stages of the evolution of living matter seem to have been lost on earth, or at least we have not succeeded in recognising them. This makes it very difficult to study the first stages of the emergence of living organisms. It could be that on another planet, however, living organisms might be found in an entirely different stage of development, and their study could have a profound effect on our understanding of the origin of life.

One could go on for a long time listing the experiments that become feasible now that manned space flight has been achieved; and, naturally, the results of such experiments will raise other questions that we cannot even formulate now. This is the way all science develops. I have no doubt that some of these questions which we cannot even ask at the moment will prove among the most important and exciting consequences of space travel.

At the Service of Peace

It would be naive, however, to ignore other and ess exalted implications of man's first breaking into space. In a world armed to the teeth with nuclear weapons the feat of putting a large satellite in orbit and bringing it down in an accurately prescribed region proves only too clearly that no region, no city on earth, is safe from the possibility of annihilation in the event of war. The space ship with a pay-load of $4\frac{1}{2}$ tons would be capable of carrying the most devastating and largest calibre hydrogen bomb. Like so many other achievements in science and technology, space travel could not only be a tremendous step forward in man's mastery of the Universe, opening up new horizons of human progress, it could also become an instrument of most terrifying devastation in war. The statement issued by the Soviet Government and Communist Party on Gagarin's flight was, therefore, most timely and reassuring. They made effective use of this great occasion when the eyes of the whole world were upon them to issue yet another appeal for international co-operation, for peace and disarmament. It stated:

"We do not place our achievements and discoveries at the service of war, but at the service of peace and security of the peoples.

"The development of science and technology opens up unbounded possibilities for mastering the sources of nature and their use for the benefit of mankind, for which peace is above all necessary.

"On this solemn day we again address a call for peace to the peoples and governments of all countries.

"May all, regardless of race and nation, colour, faith or social origin, devote all their efforts to securing world peace.

"Let us end the armaments race. Let us bring about universal and complete disarmament under strict international control."

Western Reaction

The reaction of the Western world to news of the great achievement is of great interest. For the overwhelming mass of ordinary folk the achievement has brought unlimited admiration, praise and marvelling at its magnitude and at the revelation of the tremendous lead established by Soviet technology in this field. Professor Sir Bernard Lovell echoed the sentiments of the vast majority of British scientists when he spoke of his "colossal admiration" for the way Soviet scientists and technologists had brought about one of "the greatest scientific achievements in the history of man".

Some of the professional columnists and Soviet haters, however, thought otherwise. There was, for example, the editorial comment of the *New Daily* that ". . . there is not one tittle of evidence that could be produced in a court of law to prove their claims". Then I heard a New York columnist, solemnly announced by the B.B.C. as a leading American commentator on Soviet affairs, who reluctantly admitted that Gagarin must have been up aloft some time or other but stubbornly refused to believe he was there when he said he was.

But millions of British people saw on television the arrival of Yuri Gagarin in Moscow, his moving welcome by Khrushchov, and heard him describe his experiences at a press conference. It must be said that this young man not only rendered a great service to his country and his Party by his epoch-making feat, but also by his sincere, dignified but relaxed and humble bearing before the eyes of the whole world.

During his press conference Gagarin humorously referred to reports in the American press that he came from a princely family and that various members of the former Russian aristocracy now in America were claiming to be related to him. "It is not the case," he said. "Before the Revolution my family were peasants." Those who would under-

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stand the meaning of Soviet achievements should ponder these words or Sir Bernard Lovell's first reaction when he said: "I think it is remarkable that a nation which was largely illiterate only a generation ago has succeeded in this immense task."

From one of the most backward countries in the world, with 76 per cent of the population illiterate before the Revolution, the Soviet Union has surged ahead into the ranks of the technically most advanced countries and in some fields, such as space technology, has outstripped them all. This has been made possible precisely because the opportunity has been provided for the development of the latent talents of the entire population, regardless of race, sex or station. Sons of peasants, carpenters, miners and shepherds occupy the most important positions in science, industry and in government. Nowhere has the transformation been so astonishing as in the Constituent Republics of Central Asia, where formerly almost the entire population were illiterate but where, today, the proportion receiving higher education is three times that of Britain.

The true lesson we can all learn from the latest astonishing successes of Soviet technology is that there are no limits to what can be accomplished if all the innate creative abilities of the whole population are given the most favourable opportunities for development.

Lessons of the Congo[1]

Jack Woddis

NO events in Africa's modern history have been more significant than those which have shaken the Congo since the middle of 1960. Here has been a supreme testing ground of the battle for Africa's liberation. Congo is the continent's linch-pin, Africa's great mineral heart and politico-strategic gateway. Uranium, cobalt, copper, diamonds, gold, zinc, manganese, cadmium, columbium and tantalum lie buried in its soil in measureless quantities. To the north-east of this huge, rich territory lies Sudan and the route to Egypt; to the north and the north-west, the weak young states of the French community; to the south-west, the smouldering furnace of Angola; east, the unresolved problems of Uganda and Tanganyika, and beyond Kenya, on the edge of a new crisis; southwards, the way is open to the rich copper belt of Northern Rhodesia and down, through Southern Rhodesia, to the final bastion of white domination, the Union of South Africa.

One has only to look at the map to see how the Congo is, indeed, the very heart of Africa. Genuine independence for the Congo would mean more than the loss of the immense mineral wealth owned by Belgian, American, British, French and West German monopolies; more than the deprivation to the West of vital strategic raw materials—uranium and cobalt. Politically it would open the way to the liberation from colonialism of all the remaining territories of Africa which are yet to win their independence. It is, in fact, precisely in those territories lying east and south of the Congo that some of Africa's greatest battles are yet to come.

It is understandable, therefore, that it has been the Congo which has witnessed the first major push and trial of the new imperialist method of neo-colonialism. It was the intention of the United States, Belgium and other interested Western powers that the Congo was to be granted formal independence while imperialist advisers remained the real "power behind the throne" and thus ensured that the exploitation of the Congo's riches and manpower by Western monopolies continued undisturbed.

On the very day of the declaration of the Congo's independence, that well-known American supporter of colonialism, Robert C. Ruark, wrote:

> "The greatest hope of the moneyed interests was that independence would bring such chaos that a new kind of economic colonialism might be imposed, with the white man continuing to run things, but under a black figurehead, whose material wants might easily be appeased in wine, women and flashy cars, plus a Swiss bank account."[2]

And when this game failed, when the explosion took place, when it became clear that the patriot, Patrice Lumumba and his colleagues were not prepared to sell their souls for "wine, women and flashy cars, plus a Swiss bank account", and when the Congolese people themselves showed that they would resist this attempt of the imperialists to continue to suppress and exploit the Congo behind the back of a formal independence, then the neo-colonialist onslaught became still more insistent. Pour in the Belgian paratroops. Flood the country

[1] This article is an extract from Jack Woddis's *Africa—The Lion Awakes*, which will be published in the autumn of this year.

[2] *New York World Telegram and Sun*, June 30th, 1960.

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with well-financed agents, their pockets stuffed with millions of dollars, ready to buy whom they could—puppet generals, ambitious politicians, petty dictators, tribal chiefs, even whole armies of soldiers. Tear the country to pieces—Katanga here, a pawn of Union Minière; Kasai there, a pawn of Forminière. Kasai, the diamond centre, with its new mockery of a name, the "Mining State", blatantly based on its diamond wealth and on no ethnical, historical or political justification. But Katanga was to be the key, rich Katanga, which contributes 60 per cent of the Congo's revenue. This was to be torn away from the legal Central Government and, if possibly (according to some people's aims), linked with Northern Rhodesia's copper belt to make one huge mineral complex—all with the blessing of Sir Roy Welensky.

To do all this openly was not easy for the imperialists. Hence, their readiness to hide behind the blue flag of the United Nations—and even to use the U.N. apparatus as the main weapon for their deadly operation.

And when all this proved too little, the patriotic leaders were murdered. Lumumba was bought by Tshombe from Kasavubu and Mobutu for a mere £40,000. Others were sold to Kalonji. French fascists trained in war combat against Algerian women and children, German Nazi foreign legionaries, veterans of the war in Viet Nam, Belgian and South African mercenaries, British soldiers-of-fortune—all rushed to place themselves at the disposal of the hangman. A flood of Belgian and American arms poured in. French jet military aircraft were flown in by a United States transport company. An unholy alliance of the Western powers, with the aid of fascist riff-raff from Europe, of the most extreme racialists and enemies of Africa, was thrown against defiant Congo—and all despite the clear instructions of the United Nations Security Council resolution of July 14th, 1960.

Role of the United Nations

History will find it hard to understand how the United Nations—called in, according to its July 1960 resolution, to assist the Central Government of the Congo, headed by Lumumba, to secure the withdrawal of Belgian forces and to protect the Congo's sovereignty and integrity—paved the way to the overthrow of that Government, the dissolution of the parliament which had elected it, the murder of its Prime Minister by a Belgian officer (one of those who the U.N. was to have expelled from the Congo), and the tearing apart of the living body of the Congo Republic. The United Nations Security Council resolution of July 14th, 1960, was absolutely clear:

> "Considering the request for military assistance addressed to the Secretary-General by the President and Prime Minister of the Republic of the Congo:
>
> 1. Calls upon the Government of Belgium to withdraw their troops from the territory of the Republic of the Congo;
> 2. Decides to authorise the Secretary-General to take the necessary steps, in consultation with the Government of the Republic of the Congo, to provide the Government with such military assistance, as may be necessary, until, through the efforts of the Congolese Government with the technical assistance of the United Nations, the national security forces may be able, in the opinion of the Government, to meet fully their tasks;
> 3. Requests the Secretary-General to report to the Security Council as appropriate."

Nothing could be more explicit. And yet the idea has been spread far and wide, including amongst opponents of colonialism, that the United Nations was called in "to restore law and order". These words never appeared in the July 1960 resolution, which did not deal with internal Congolese matters but with the aggression by the Belgians and the assistance to be given to the Congolese Government to overcome this attack.

"To restore law and order" has always been the slogan used by reaction to suppress the people. It was in the name of "restoring law and order" that Thiers slaughtered the Communards. It was to "restore law and order" that Liebknecht and Rosa Luxemburg and countless others were murdered by Hitler's forerunners. It was "to restore law and order" that Field-Marshal Mannerheim, the butcher of the north, killed, as *The Times* admitted, tens of thousands of Finnish workers in 1918. Chiang Kai-shek, Franco, Mussolini, Hitler, every dictator in history has always hidden his mass repressions behind the slogan of "law and order". And the Congo has been no exception. The fact that the July 14th, 1960, resolution was never published in the Western press shows that the imperialists never had any intention of carrying it out. In fact, they did just the opposite. Instead of assisting the legal Central Government which had called it in, the United Nations secured the downfall of that Government and the hoisting into office in Katanga, Kasai and Leopoldville of the Belgian-backed-American-financed puppets, Tshombe, Kalonji, Kasavubu and Mobutu. When it was a question of stopping Mobutu closing down Parliament or saving the lives of Lumumba and his colleagues, the U.N. claimed that it had no authority to intervene. Yet it did not hesitate to use blatant intervention when it was a question of preventing the Congolese Premier using his own radio to broadcast to his people. It acted promptly to deny the Lumumba Government access to its airfields—but allowed those same airfields to be used by the Belgians and

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Tshombe to drag the beaten, bloodied body of Lumumba from Leopoldville to Katanga and death.

Why was it Possible?

But there is no space or intention here to narrate all the sordid detail of the betrayal of the Congo. The big question for Africa and the world is *why* did this happen? Why was it possible for this terrible series of events to take place?

First and foremost, the responsibility rests with the Western powers. Not Belgium alone (which is an all-too-easy Aunt Sally for those hesitant to point their finger at the ultimate criminal), but above all, the United States, which, through its dollars, military equipment and dominating political and diplomatic positions in the Western world, has been able to call the tune. No one really believes that little Belgium could have defied the might and economic power of the United States, Britain, France, Western Germany and the other N.A.T.O. powers. Only an American-backed Western alliance could have produced the present disaster in the Congo. Even President Kennedy's brother, the new American Attorney-General, has referred to Kasavubu as "a tool of the American Central Intelligence Agency".

And along with America, with its huge financial stakes in Katanga, was French imperialism, plotting from its hideout across the river at Brazzaville, hoping to pull off a deal through its puppet Abbé Youlou, ready to send in French military aircraft, to loan French officers boasting: "You can call me a fascist". The German Federal Republic was eager, too, rushing to make its airfields available, looking for a toe-hold in the Congo. And what of Britain? The big British monopoly, Tanganyika Concessions, with its shares in Union Minière, was not indifferent as to which way the "wind of change" blew. Not only has "Tanks" shares in Union Minière. The Belgians have shares in "Tanks". And the Americans have shares in both. British interests in Rhodesia are interested, too. And the British shareholders in the Banguela railway, with its links from Katanga to Angola, and to the copper belt and down to Wankie coal mines. These, too, had their eyes on the situation. Recruitment offices for Tshombe were set up in numerous European capitals. Recruitment agents went to work, too, in Salisbury, Johannesburg, and in Nairobi.

In other words, the combined forces of the imperialist powers were thrown against the Congo.

This, then, is the first and prime reason for the disaster in the Congo. But secondly, there was the role of the United Nations. There are many people and states, including some in Africa, who regard the U.N. as an impartial, neutral, above-conflict adjudicator, as a referee, the voice and conscience of the world, a protector of the weak and oppressed, a dispenser of justice. This idealist conception of the U.N. is divorced from reality, from the actual world in which we live. The United Nations, as a body, represents the imperialist states, other smaller capitalist countries, the newly-independent states of Asia and Africa, the countries of Latin America, and the people of the socialist camp (but still excluding China).

In its deliberations the United Nations is by no means united. It represents a real world, and mirrors the conflicts of that world. Each vital policy decision, therefore, becomes a battle of contending interests, between those who stand for peace and genuine independence for nations, and those who prepare for war and regard underdeveloped areas of the world as sources of profit and as strategic bases.

But even when, after discussion and concession, some agreement is reached on paper, there still remains the question of carrying out the decision. And this is where the second major problem really lies. For even when the U.N. Security Council adopts such a correct and progressive resolution as the resolution of July 14th, 1960, the machinery for implementing it, though it is often referred to as "an international civil service", is not controlled by the United Nations but by only one side of this body. The machinery of the U.N., the U.N. "state apparatus" as it were, is mainly in the hands of the Western powers, and their supporters. Just consider these facts. Of 28 deputies to the Secretary-General, 17 are from the United States or its allies, 10 from neutral or former colonial countries, 1 from the socialist countries. Out of 34 directors, 28 are from the first-named group, 5 from the second, and 1 from the third. Since 1955, some 2,000 technical experts from the United States and its allies have been sent to various countries by the U.N.; none has been sent from Africa, and only 40 from the socialist countries. And for the U.N. Congo operation, 45 military staff officers from the United States and its allies, none from the socialist countries; 546 representatives in police and liaison units in the Congo from the Western powers, 24 from Africa, and none from the socialist countries; 220 non-military staff from the Western powers, none from the socialist countries. So much for the oft-vaunted impartiality of the U.N. apparatus.

The U.N. Secretariat and its bodies are so overloaded with Western representatives, particularly susceptible to pressure from the United States as the most influential power, that it is inevitable that this U.N. "state apparatus" should be neither equipped in personnel nor politically disposed to carry through any just resolutions of the United Nations, but would constantly seek to stall on them,

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or to ignore them completely and do the opposite to what the resolutions demand.

Thus it was that the U.N. apparatus was in the hands of the enemies of the Congolese people—and this made possible the setting at nought of the resolution of July 14th, 1960.

Congolese Disunity

But is that all? Can one say that it was the fault of the imperialists and the U.N. apparatus, and leave it at that?

Not at all. For the question still remains, how was it possible for the imperialists to inflict such terrible damage on the Congolese people after the declaration of independence on June 30th? How was it possible for the imperialists to hide behind the U.N. apparatus in the Congo in order to carry out its nefarious schemes, to overthrow the legal Government, instal puppets, suppress Parliament, and tear away Katanga and Kasai? Remember, the legal Congolese Government was a coalition of parties backed by the majority of the Congolese people. It was supported by the entire socialist camp of a thousand million people. It had the sympathy and backing of peoples and governments in Africa and Asia. It was, in fact, supported by the majority of people in the world.

Why, then, did the Congo suffer such severe setbacks?

First, the Congolese people were not united. A divided people is always at the mercy of an enemy such as imperialism—and an experienced, cunning and ruthless enemy such as imperialism is well able to make use of every fissure, to expand every little rent in the fabric of national upsurge, to probe ever deeper, to widen the divisions, intimidate here, bribe there, play on individual amibitions, make use of backward-looking tribal affiliations, introduce a reign of terror when necessary and physically remove the most consistent leaders and patriots. The united front of the imperialists (for, notwithstanding their own differences, they were united against the genuine independence for the Congo) should have been met by the united front of the entire Congolese people. In contrast to other African countries, the Congolese political parties were comparatively new. No time had been available in which to build up a powerful, united national front—and in 1960 the Congolese people went to the polls to vote for one of a score of parties. Some degree of unity was achieved through the formation, under Lumumba, of the legal Government, which was a coalition of several parties. But it all took place very quickly, before the unity could be cemented by a real national front below.

There is no doubt, too, that the absence of long-standing, experienced trade unions, embracing workers irrespective of tribal affiliation and united on a class basis, weakened the national front. Here, too, in contrast to a number of other African territories, the workers had had little time to build trade unions. Thus, there was no experienced, solid working-class organisation to help provide a firm basis for the national front. And the peasants, of course, were not at all organised. Under these conditions, with a shaky state apparatus still largely in Belgian hands, it was extremely difficult to mobilise the mass resistance of the whole people to imperialist intervention, to resort to the *levée en masse*, to rely on the armed workers and peasants as a force which would remain loyal and united behind the Central Government, and vigilant against every move of deception and treachery. Time, once again, was not in favour of the Congolese people. They had hardly run up the new national flag before the imperialist typhoon was upon them.

Disunity of the African States

Added to the disunity of the Congolese people and parties, there was the disunity of the African states themselves. Not merely disunity between the "Casablanca" states and the "Brazzaville" states —but a partial lack of cohesion, of resolution even, including amongst the more advanced African states, partly explained by the varying degrees of reliance placed by the different African governments on the U.N. operation in the Congo. This arose because some African states and leaders have maintained a blind faith in the U.N.—not in the real, existing U.N. of Hammarskjoeld, the U.N. controlled by N.A.T.O. and by the United States, but an entirely imagined U.N., an impartial referee who would safeguard the Congo's independence, drive out the imperialists and uphold Congo's sovereignty and liberty. Thus, it was that as each successive deterioration in the situation took place, these African states threatened to take drastic measures, to withdraw their troops from the U.N. command, to place them at the disposal of the legal Government headed by Lumumba, to set up their own African command to rescue the Congolese people from disaster. But no unified, resolute steps along these lines were ever taken.

Why was this so? Why was it that the Congo was strangled not only by imperialist finance, imperialist representatives and imperialist puppets, but also by honest African troops from independent African states? The failure of the African states to save the Congo from disaster and to save Lumumba and his colleagues stems, ironically enough, largely from their desire to "keep the cold war out of Africa". This just desire of the African people to retain their continent as a zone of peace and not be drawn into imperialist war plans and military entanglements

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has been interpreted by some African national leaders as a necessity to keep the Soviet Union out of Africa. But the U.N., as it stands at present, controlled by the Western powers, is itself an instrument of the cold war, even of hot war. The African states were reluctant to rely on assistance from socialist countries, they hesitated to act resolutely themselves to aid the Congo, they were justifiably suspicious of the intentions of Western imperialism —so where could they turn? Only—they thought—to the U.N.

Through having no hesitation, in their moment of peril, to turn towards the Soviet Union and other socialist countries, Guinea, Cuba and the United Arab Republic, safeguarded their independence and still live; but Congo, poor, bleeding, torn Congo, tragic martyr of imperialist greed, lies temporarily under the heel of the oppressor. Is there not a lesson here for the African states?

Certainly the African people have learnt much from the experience of the Congo. They now understand. When, after the news of Lumumba's appalling end, they rose in their anger in a score of capitals, it was not alone the Belgian Embassies which were the target of their wrath. U.N. offices and American Embassies and Information Centres were likewise attacked.

Experience sometimes has to be bought at a terrible price. The disaster in the Congo is not solely a catastrophe. The people of the Congo—and indeed of all Africa—can yet turn this setback into triumph, provided that they learn the lesson of the Congo well. There can be no real or lasting peace and freedom for the African people until the last remnant of imperialism, the last imperialist puppet, the last imperialist economic root, the last imperialist soldier, has been driven out of the African continent. And to carry through that job Africa must recognise fully and clearly who are her real enemies and who are her real friends.

Recent Advances in Biology

Alan G. Morton

EVERYONE is aware of the rapid progress now being made in the physical and chemi-sciences, if only because of their immediate impact on every-day life, whether as H-bombs, automation in the factory, or new plastics for the kitchen. At the present time biology has much less immediate influence on our lives, and it may be asked, to what extent is biology advancing and what are the most important lines of development in this branch of science?

Without going into details, it should first of all be pointed out that biology has generally tended to lag behind physics and chemistry because of the stimulus given to the physical sciences by the growth and needs of industry. The relative neglect of biology, as judged for example by the amount of Government money devoted to it, is quite obvious in Great Britain today. Even in the Soviet Union, where a planned attempt is made to keep a correct balance, the drive for industrial expansion has necessarily meant greater emphasis on the physical than on the biological sciences.

In the last twenty years or so, however, a certain expansion of biological research has taken place in most industrial countries, including Britain. This increased interest in biology is connected in part with the growth of research in agriculture and medicine, and in part with the greater use of biological methods in industry for the production of antibiotics, vitamins and other substances. As a result of this research, important advances have been made in many fields, even though there has been no revolutionary break-through in theory or practical application.

It is not easy to decide in such a wide field what are the most significant advances. Any assessment is bound to reflect the personal interests and views, even the prejudices, of the writer. Moreover work with the most immediate practical results is not always that which has the most profound results in the long run. The discovery of antibiotics has been a remarkable advance, and of enormous benefit to humanity, yet probably of less importance for the understanding of the nature of life than some other less spectacular work of which I should like to say something here.

The Nature of Living Matter

To my mind the most significant progress in biology in the past fifteen to twenty years has been a steady advance in understanding the fundamental nature of living matter, the types of substances which compose it, and the special types of chemical change which go on in living matter, which characterise it and distinguish it from non-living matter. This is the field of biochemistry, which has now established itself as a branch of science in its own right, applying the

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facts and methods of chemistry and physics to investigate the chemical and physical processes going on in the bodies of living organisms, whether animals or green plants, whether men or bacteria.

For many years scientists have recognised that the chemical changes and processes in living organisms are not in principle different from chemical processes that can be carried out in a test tube or a factory. "Living" chemical processes are, however, usually much more complex. They are highly integrated with one another, and linked with particular structures in the cell, and are able to proceed at ordinary temperatures with extraordinary rapidity owing to the presence in all living organisms of special catalysts, known as enzymes.

A catalyst is a substance which speeds up a chemical reaction without being destroyed in the process. A small amount of catalyst can therefore cause a large amount of chemical change. Enzymes carry out this function in living organisms; they seem always to be proteins, and are highly efficient at their function. Most enzymes are highly specific, that is, each enzyme speeds up one particular chemical reaction only.

Now many, if not all, enzymes can be quite easily removed from the cell, and their catalytic activity can be demonstrated in the artificial conditions of a test tube. For many years bits of the biochemical mechanisms of living organisms have been isolated in this way, and a good deal of the internal working was thus found out in a piecemeal fashion. In the last few years, however, very great advances have been made in unravelling further both the complexity and the co-ordination of the cell mechanisms.

These advances became possible because of new experimental techniques, themselves based on advances in physics or chemistry. For example, radioactive forms of many elements became readily available as a by-product of atomic energy development. These radioactive atoms were introduced into living systems as "labels" for particular substances; the movement or change of these substances could thus be followed in a way previously impossible. New methods were devised for separating minute amounts of different substances, and also for separating the living cell itself into its structural components. Particular chemical activities are found to be linked with particular cell structures. Finally the electron microscope enables us to "see" the finest cell structures which are beyond the reach of the ordinary light microscope.

The results of using these new techniques has been to give a much clearer picture not merely of the individual chemical reactions in a living organism, but of the way in which a whole series of reactions (and their associated enzymes) are co-ordinated and linked together to form a system or biochemical mechanism which serves a particular function. In some cases a particular mechanism is linked to a special structural part of the cell, so that we begin to understand how structure and function are inseparable aspects of the organisation of the cell.

Common to all Living Organisms

One of the remarkable conclusions from this work is that a certain number of biochemical mechanisms are common to every type of living organism. In spite of the fantastic differences in form between a man and a tree and a single-celled microscopic bacterium, their cells all possess certain identical yet highly complex biochemical mechanisms. The vast majority of living organisms gain energy to maintain their vital activity by oxidising the sugar which is known as glucose (or grape sugar).

In the cells of yeast (the single-celled fungus used in bread and beer making) there is a mechanism for breaking down glucose by a series of complicated chemical steps depending on the presence of eight distinct enzymes. This represents the initial part of a mechanism by which (in the presence of oxygen) glucose is ultimately oxidised completely, the energy liberated being used to maintain the synthetic activity of the cell. Now precisely the same mechanism with the same eight enzymes is found breaking down glucose in human muscles. Indeed, this process appears to be a regular part of the internal arrangements of most animals and plants, possibly of all living organisms.

Oddly enough, there is another completely distinct method of glucose breakdown involving different enzymes and quite different chemical steps. This second mechanism is not quite so widely distributed as the first, yet it is very common, and in most higher animals and plants both systems can exist side-by-side in the same cell. Indeed it would seem that the possession of two systems of glucose breakdown may be an advantage, and that an organism may switch from one to another in response to external conditions and to its internal requirements.

These facts and many others show the existence in living organisms of a number of basic mechanisms, systems of linked enzyme-controlled reactions, some of the most important and fundamental of which are found in every living creature from the simplest to the most complex. The existence of such common biochemical systems is

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additional evidence that all living organisms are related and have arisen by evolution from the same type of primitive living matter. These facts also show that the main biochemical mechanisms must have already been established at an astonishingly early stage in the development of living organisms, long before the evolutionary separation of the various groups of living organisms that we know today.

Photosynthesis

One of the most brilliant biological researches has been the elucidation in the last ten years of the facts about photosynthesis in green plants. Most people are aware that green plants can utilise the energy of light in order to built up complex carbon compounds (sugars, starch, fats) from the carbon dioxide of the air. In the light, plants thus take in carbon dioxide which is converted into cell substance, whilst liberating an equivalent quantity of oxygen. This process is known as photosynthesis and on it depends the existence of man and of all animals.

Directly or indirectly all animals rely on obtaining their supply of complex carbon and nitrogen compounds from plants—either by eating plants, or by eating other animals which eat plants. Animals must get their food ready-made, and only green plants, capable of using light energy for synthesis, can provide it. Furthermore, photosynthesis is the process which maintains and replenishes the oxygen of the atmosphere. But for the activities of green plants we should all perish from lack of oxygen in a very short time.

The green plant pigment chlorophyll has long been known to play an essential role in photosynthesis, but the working out of the details of the whole complex process was a labour of incredible difficulty. The discovery of the complete mechanism was the culmination of much earlier work and involved work in numerous laboratories. Nevertheless the main credit for the final solution of this old puzzle must go to the brilliant work of Professor Arron and his co-workers in the University of California, where they have completely established the basic mechanism of the whole process. This was an event of immense theoretical importance with unforeseeable practical possibilities in its train. For who can say how soon we may be able to use the principles employed by the green plant in order to produce food or raw materials by direct tapping of the sun's energy?

The actual details of the biochemical mechanism of photosynthesis are far too complex to attempt to summarise. But it is interesting to note that it embraces a number of biochemical systems already known to play a role in other aspects of living organisms. It illustrates again the point made earlier, that many of the fundamental biochemical mechanisms were evolved very early and are common to many living systems.

When Engels defined life as the mode of existence of protein, based on constant metabolic interchange with the environment, he showed his extraordinary ability to grasp the essential nature of things. No doubt his long study of dialectics had something to do with this ability! Certainly the most recent experiments in biology have abundantly confirmed the correctness and the fruitfulness of Engels' conception.

Ceaseless Interchange

Modern research shows that proteins are fundamental to the structure and the activities of living organisms, and also that the stability and persistence of organisms is really the stability of ceaseless movement, in which substances and structures are simultaneously built up and broken down, and there is continuous interchange of material between different parts of the cell and the organism, and between the organism and its internal and external environment.

A key process in living matter is that by which new proteins are synthesised. Every living organism is constantly making new protein, and not just any protein, but hundreds of kinds of protein, each kind with its specific and constantly reproduced structure. How the cell smoothly builds up such enormous and complicated molecules, each to a precise pattern, is one of the fundamental questions of biology which have not yet been solved.

But very significant progress is now being made in unravelling the complexities of the process. Certain parts in the mechanism can be isolated and made to work outside the living cell. If a mass of cells is coarsely ground up, so as to break up the primary structure of the cells without disintegrating the fine structure, then the fine structures can be separated from one another by spinning the whole mass, suspended in a suitable liquid (usually a solution of cane sugar in water), in a high-speed centrifuge—something like the domestic spin-drier. The different fine structures present in the cell settle at different speeds and can thus be separated.

It appears that different structures are associated with different stages of protein synthesis, and that during the process there must be transfer of materials from one part of the cell to another. Particular interest attaches to the question of how the synthesised proteins are built to an ordered pattern. Practically all proteins are formed by the

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combination of large numbers of about twenty basal units (known as amino acids). A complete protein molecule may be built up of more than a thousand of these twenty kinds of basal unit.

An astronomical number of combinations of the protein "building bricks" is theoretically possible. In fact it is found that living organisms only produce a limited number of the possible combinations, but these particular combinations are produced and re-produced with extraordinary regularity and accuracy. In other words, each of the many types of protein molecule produced in a living cell has a definite and reproducible structure or pattern, and indeed the ability of particular proteins to act as enzymes and in other highly specific ways depends on the maintenance of this precise pattern, and quite small variations may render the protein "inert" and incapable of playing its proper part in vital activity.

Thus the problem of how proteins are synthesised to an ordered pattern is one of the most fundamental questions of biology. Here the mechanism of protein formation becomes linked to the question of heredity, the maintenance of the specific pattern and structure of an organism from one generation to the next.

There is now much evidence that the maintenance of an ordered structure in proteins is associated with certain other complex molecules, the nucleic acids, which appear to be universally present in all cells, particularly, but not exclusively, in the nucleus.

A discussion of this problem would lead far beyond the scope of this article, however. Work on these questions is going on energetically in many laboratories, and there can be little doubt that the main features of the process of protein synthesis in its biochemical aspects will become clear in the next decade or so. It should then become possible to reproduce the biological process in the laboratory or even industrially, with consequences that may be of enormous benefit to mankind.

Writing in the 1870's Engels predicted that man would be able to make proteins (outside the living organism) in a hundred years' time. It looks as if in this question, as in so many others, Engels was just about right.

Legal Problems Involved in Peaceful Uses of Atomic Energy[1]

P. S. Romashkin

EVER since science succeeded in splitting the atom, one of man's greatest discoveries; ever since the day mankind first experienced on itself the appalling after-effects of the atom bomb, the use of nuclear energy in the interests of peace and banning the production of nuclear weapons has become one of the cardinal problems of our time.

The peoples all over the world vigorously demand that atomic energy should never again be used to the detriment of humanity, that no part of fissionable materials shall be used to make death-dealing weapons. This is dictated by the vital interests of peace and general security, and it is demanded by the universally recognised standards of international law.

The banning of nuclear weapons is one of the most pressing questions of contemporary international law, and the attention of many jurists in different countries in all parts of the world is focused on it. The question has been more than once raised, too, by the International Association of Democratic Lawyers, and this organisation has, among other things, approved the declaration of the Third, Tokyo, conference on the prohibition of nuclear weapons. The declaration has convincingly shown, on the basis of the existing norms of international law, that nuclear weapons are illegal.

The question of banning the production and use of nuclear weapons has been repeatedly raised in the United Nations, and the U.N. General Assembly in a number of its resolutions noted the need of

[1] From *Sovetskoe Gosudarstvo i Pravo*, No. 2, 1961. The author is a Corresponding Member of the U.S.S.R. Academy of Sciences, and Director of the Academy's Institute of Government and Law.

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eliminating nuclear weapons from the countries' armaments. The disarmament resolution unanimously adopted by the Ninth Session of the General Assembly on November 4th, 1954, can serve as an example. It stressed the need of concluding an international convention on disarmament to stipulate complete prohibition of the manufacture and use of nuclear weapons or any other weapon of mass annihilation, and the channelling of the existing stockpiles of nuclear weapons into peaceful uses.

What has given rise to this demand is the immense power of nuclear weapons, which exceeds many times over that of any conventional arms. Their use cannot but entail enormous human sacrifices. Besides its great and unparalleled explosive force, this weapon has a radio-active effect causing agonising death to people within the radius of the radio-active radiation generated by the nuclear blasts. Atomic explosions lead to general poisoning of man's biological environment: the radio-active particles showered during the explosions spread all over the world, settling in the form of fall-out, which causes fatal diseases among people. These characteristics of nuclear weapons show beyond all question that these weapons cannot be put in the category of conventional arms but must be classed as weapons of mass annihilation.

Weapons Already Banned

In other words, nuclear weapons belong to the categories of weapons the use of which has already been banned by international law and condemned by mankind, that is poison, poison gas, germs and chemicals, and so on.

One cannot but see many characteristics that are common to these varieties of arms and nuclear weapons. Since they strike everything living over a considerable distance from the spot where the explosion occurs, they are generally called means of mass (or general) annihilation. Besides, the concrete ways in which nuclear weapons affect people are very much like those of poison gas, poison and germs. Science has now proved the baneful effect of nuclear radiation, which on striking the human organism can cause death or dangerous and agonising sickness (radiation sickness, cancer of the bones, and so on), depending on the dosage of the exposure. The thermal effect of nuclear weapons, too, leads to mass destruction of all living organisms over a considerable distance from the place of explosion.

These peculiarities of nuclear weapons furnish the grounds for extending to it the conventions on the banning of war gas, poison, germs, and so on. We mean such international documents as the St. Petersburg Declaration of 1868, which stressed that there were technical bounds within which war's needs must stop before the requirements of the love of man; the Hague Convention of 1907 Respecting the Laws and Customs of War on Land, under which it is prohibited to employ poison or poisonous weapons, also arms, projectiles, or material of a nature to cause unnecessary suffering, and the Geneva Protocol of 1925, prohibiting the use in war of asphyxiating, poison, or other similar gases and germs. Inasmuch as by virtue of these authoritative documents, which were signed by many states and were approved by public opinion all over the world, the employment of barbarous types of arms possessing destructive qualities similar to nuclear weapons has been formally prohibited, the prohibition should be extended to nuclear weapons, too.

The validity of extending this prohibition to nuclear weapons is supported by the fact that in various international documents certain general rules have been formulated with the aim of protecting humanity against the employment of destructive weapons that had not been known at the time the particular conventions were concluded. This thesis was expressed especially clearly in the well-known Martens Reservation, contained in the Hague Convention of 1907, Respecting the Laws and Customs of War on Land. Another important feature attesting to the illegality of nuclear weapons is that the nature of this weapon makes it impossible to observe the firmly-established principle of international law under which military operations must not be directed against the civilian population.

War Crimes

The Statute of the International Military Tribunal adopted in London in August 1945 had, therefore, characterised as one of the gravest war crimes the senseless destruction of towns or villages that is not justified by military necessity (Article 6, clause "b").

The indictment against the chief German war criminals even contained a special section headed: "Pointless Destruction of Towns, Settlements and Villages and Devastation Unjustified by Military Necessity."

The International Tribunal sharply condemned the monstrous practice of the Nazi air forces of raiding peaceful towns and civilian populations. The British chief prosecutor, Shawcross, at the Nuremburg trial, specially underscored in his closing speech the criminal nature of the use of military violence on the civilian population. "The chief war crime these people are charged with," he said, "is the violation of the most firmly established and least conflicting rules of waging war, namely, the rules that the civilian population must not be a direct objective of the military operations." After pointing out that crimes against the civilian population are monstrous, the International Tribunal condemned them vigorously.

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Thus, the International Tribunal's very approach to this question shows that the use of nuclear weapons quite obviously is contrary to international law, as these weapons cannot be employed in an armed conflict without causing enormous sacrifices among civilians.

That is exactly why the question of banning the use of nuclear weapons was raised also during the international diplomatic conference in Geneva in 1949. That conference adopted four conventions respecting the protection of war victims (the conventions were later ratified by many states). It is highly indicative that for the first time in the history of international law a special convention was adopted respecting the protection of the civilian population in war time. Article 3 of the convention prohibits the killing, mutilating, brutal treatment, tormenting or torturing of persons not directly taking part in military operations. The adoption of this special international convention is further proof that nuclear weapons are incompatible with the universally recognised standards of international law.

Employment of nuclear weapons grossly contravenes also the international convention of 1954 for the protection of cultural property in the event of armed conflict.

Underscoring the illegality of nuclear weapons, the British journal, the *Catholic Times*, wrote that it regarded as quite immoral the use of the atom bomb, which does not distinguish between its victims, killing old and young, women and children, combatants, workers at munitions and non-munitions plants.

That was also the tenor of an utterance by Ralph Lapp, prominent American nuclear scientist, who said that the use of present-day atom bombs made it impossible to pick a target, and in such case a town is exposed to complete destruction without distinction between military objectives and residential blocks.

Employment of atomic weapons flagrantly contravenes also the genocide convention of 1948, as mass annihilation of the civilian population by means of thermonuclear weapons would under certain conditions constitute the crime of genocide.

Special Agreement Needed

The validity of the prohibition of nuclear weapons by the existing standards and principles of international law does not rule out the need of negotiating a special international agreement (which may be an independent document or a component part of a comprehensive disarmament agreement) containing a solemn undertaking by the states to renounce the manufacture and use of A- and H-bombs of any kind. As we know, people will sometimes argue about whether it is advisable to conclude a special convention on the prohibition of nuclear weapons once we believe that the employment of such weapons is contrary to international law in effect today. However, the record of international practice shows that not infrequently agreements are concluded reaffirming already existing principles of international law, and such reaffirmation is far from pointless, obviously being of practical use. No one will dispute, for instance, the immense positive importance of having incorporated in such an authoritative international covenant as the Charter of the United Nations a whole series of principles which had already been generally recognised earlier, such as respect of the sovereignty of states, and non-interference in their internal affairs, the principle of *pacta sunt servanda* (agreements must be kept), and so on. The conclusion of an agreement banning nuclear weapons, too, would undoubtedly be of practical use. To violate this ban and employ such weapons would be even more difficult, and the result would be further to paralyse the aggressive imperialist circles who rely on this weapon.

The broadest sections of peace-loving humanity today uphold the thesis that nuclear weapons are illegal and that they should be banned completely and unconditionally. This is the firm and abiding position of all states that really want to save humanity from the menace of another bloody war. The Soviet Union has made a great and truly inestimable contribution to the banning of nuclear weapons. The whole world is aware of the achievements of Soviet science and engineering in atomic fission and rocketry. It is universally admitted that in these domains the Soviet Union is ahead of the most industrially- and economically-developed countries in the capitalist world. But the desire to make use of this advantage for military and political purposes is thoroughly alien to the Soviet Government. On the contrary, the Soviet Government has been working consistently and energetically to make these achievements completely serve the interests of peace and human progress. It has repeatedly proposed to the Western powers that nuclear energy shall be used exclusively for peaceful purposes.

In formulating the unalterable line of Soviet foreign policy in this sphere, N. S. Khrushchov said at the Twenty-First Congress of the C.P.S.U.: "Let's ban for all time the testing, production, and use of nuclear, hydrogen and rocket weapons, let's destroy all stockpiles of these lethal weapons; let's use this supreme discovery of human genius exclusively for peaceful purposes, for the common good. Our Government is ready to sign an appropriate agreement at any time."

The Soviet Government always backs its words

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with concrete acts, and it has done the same on this question. Already in 1946, when the United Nations had only started to consider the problem of disarmament, the Soviet Union submitted to the U.N. Atomic Energy Commission a draft international convention prohibiting the production and employment of weapons based on the use of atomic energy for mass annihilation. The draft put forward the idea of total prohibition of nuclear weapons, of states renouncing their employment, of banning their manufacture and storage, and destroying their stockpiles.

Although the Soviet proposals indicated a sure way of solving the nuclear problem in the interests of peace and security, the Western powers rejected them and offered instead the not unknown "Baruch Plan", which envisaged neither the banning of nuclear weapons nor the stopping of their production, nor the destruction of their stockpiles. That plan expressed the negative attitude of certain imperialist circles to the idea of renouncing these weapons. This attitude of the Western powers, which has remained unchanged in latter years, is why no international agreement to ban nuclear weapons and to use atomic energy exclusively for peaceful purposes has been concluded to this day.

The whole world knows that the Soviet Union has never ceased its efforts to attain a constructive solution of this problem. New and convincing proof of it is the programme it advanced for general and total disarmament, a programme which includes as an integral part the provision of complete prohibition of the A- and H-bombs, cessation of the manufacture of every type of these weapons, their removal from the armaments of states and destruction of their stockpiles.

General Disarmament

The Soviet Union has done everything it could to help draw up an international treaty for general and total disarmament. A disarmament committee of ten states was set up in 1959 to work in that direction, and the Soviet Government submitted for its consideration concrete proposals respecting the chief provisions for such a treaty. Conspicuous among them were the proposals for the unconditional prohibition of every kind of nuclear weapons. Moreover, striving to make it easier to reach an agreement on these questions with the Western powers, the Soviet Government agreed to accept the idea expressed by some of the Western leaders—to start nuclear disarmament by destroying the means of delivery of nuclear weapons.

The Western powers' response to this initiative of the Soviet Union was to present some plan that was in no way concrete, which envisaged neither renunciation of the use of nuclear weapons nor the destruction of stockpiles. In the end the Western powers even repudiated their own proposals (something they had repeatedly done before) which had been accepted by the Soviet Union (for instance, the idea of starting with the destruction of the means of delivery of nuclear weapons). This attitude of the Western powers doomed the work of the Committee of Ten to failure, and under the circumstances the socialist countries walked out of the committee and placed the disarmament problem for consideration by the Fifteenth Session of the U.N. General Assembly. The socialist countries' goodwill in the matter of settlement of the disarmament problem without delay was fully reflected by the appointment of prominent statesmen as heads of their delegations to that session.

Owing to this initiative, top leaders of many countries gathered at the Fifteenth Session of the General Assembly, thereby creating favourable conditions for a business-like consideration of the disarmament problem. N. S. Khrushchov, head of the Soviet Government, offered new constructive proposals for disarmament. By these proposals the Soviet Union went more than half way to meet the Western powers, thus opening up the possibility of adopting the main provisions of an agreement for general and total disarmament. But they were not adopted, because of the negative attitude of the Western countries, which declined to support the Soviet proposals. This being so, Khrushchov's proposal that an extraordinary session of the General Assembly be called with the participation of heads of governments, specially to take up the disarmament problem, is particularly timely.

From the point of view of international law, test explosions of nuclear weapons, too, should be deemed illegal, since such explosions have far-reaching injurious consequences, as has been proved by modern science. Democratic lawyers of different countries have repeatedly underscored that nuclear tests are illegal. Convincing proof of their illegality is adduced, in particular, in the volume *A Contribution to the Study of Disarmament Problems*, published by the International Association of Democratic Lawyers, in 1958.

It goes without saying that really to put an end to nuclear tests all states possessing nuclear weapons will have to act. Yet the Western powers, up to now, have hindered the conclusion of an international agreement on this question. Essentially, to this day they have rejected the idea of stopping nuclear tests for all time, and it was only due to the persistent efforts of the U.S.S.R. and the other peace-loving states that the Fifteenth Session of the General Assembly passed a resolution calling for ending nuclear weapons tests and another resolution calling for prevention of the further spreading of these weapons.

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Thus, on the whole, to use nuclear energy for war purposes and to produce explosions of nuclear weapons run counter to the principles of international law, but the aggressive imperialist circles who are staking everything on nuclear weapons to realise their policy, are preventing the application of these principles in practice. The latest provocation of the French atom-mongers furnishes eloquent proof of this.

The Fourteenth Session of the U.N. General Assembly already in November 1959 passed a special resolution censuring France's preparations for conducting atomic tests, and calling on the French Government to give them up. The French authorities, however, ignored this demand of world public opinion. They violated, also, the resolution of the Fifteenth Session, and literally a few days after it had been passed, on December 24th, 1960, they carried out their scheduled A-bomb tests in the Sahara.

Peaceful Uses

While working for the banning of nuclear weapons, the Soviet Union has always attached great importance to peaceful uses of atomic energy. The Soviet Union's immense successes in peaceful uses of atomic energy have enabled it to help other countries in this field. The Soviet Union built the world's first atomic power station in 1954, and under construction are other large atomic power stations, the total capacity of which in 1960 was 2,500,000 kW.

The U.S.S.R. has also built the world's first nuclear-powered ice breaker, the *Lenin*, and atomic energy is being applied more and more extensively in the iron and steel industry, biology, agriculture, medicine and engineering. Soviet science ranks topmost in the development of super-power accelerators, and in operation in our country is one of the largest proton synchrotrons. Soviet scientists have taken an important stride forward toward solving one of the most pressing and most difficult problems of contemporary science, namely, the problem of controlled thermo-nuclear reactions. Solution of this problem will provide mankind with the greatest and most inexhaustible source of power.

The U.S.S.R. co-operates in this domain with other states on a bilateral as well as a multilateral basis, and its co-operation is built on the principles of equality, non-interference in the internal affairs of other states, and strict observance of their sovereign rights. The Soviet Union has bilateral agreements with eleven countries, on the basis of which it co-operates with them, giving them scientific-technical and industrial assistance. These countries are the People's Republic of China, Czechoslovakia, Poland, Hungary, Bulgaria, Rumania, the German Democratic Republic, Yugoslavia, Egypt, Iraq and Indonesia.

The Soviet Union was the first country to practise international co-operation in peaceful uses of atomic energy by giving direct aid to individual countries on the basis of bilateral agreements. The first agreements of this kind between the U.S.S.R. and other countries (the People's Republic of China, Poland, Czechoslovakia and G.D.R.) were concluded between the end of March and the middle of April 1955.

With Soviet assistance these countries are setting up scientific-research centres equipped with atomic reactors and accelerators of nuclear particles. The assistance and co-operation programme also includes the training of native personnel, supplying equipment and providing materials and instruments needed for research and experiments.

The Soviet Union does not regard the assistance it gives in peaceful utilisation of atomic energy as a commercial enterprise or as a means of establishing control over the atomic industry of other countries. The agreements contain no provisions in any way impinging on the sovereignty of the other countries, checking the development of research, or encroaching upon patent or any other rights of the countries or of the individual specialists conducting work on installations furnished by the Soviet Union. The country getting materials and equipment under these agreements is their sole owner and manager, as it is of all discoveries and inventions made with the aid of the materials and equipment, and is accountable to no one for the use it makes of the assistance received.

United States Agreements

The Soviet Union's agreements differ in principle from the bilateral agreements concluded by the United States; while the latter specify different kinds of assistance: furnishing certain amounts of fissionable material, building reactors, and so on, the conditions for the assistance are disadvantageous to the countries getting it. All the agreements contain clauses giving the United States control over the use the recipient country is to make of the assistance. The American inspectors are vested with the power to control the development of the atomic industry and to demand that patents, discoveries and inventions made in those countries in the atomic field shall be turned over to the United States.

A graphic example is the agreement concluded between the U.S. and French Governments on June 29th, 1956. No clause in the agreement underscores that the signatories have equal rights and obligations under the agreement. Although formally the purpose of the agreement is to co-operate in peaceful uses of atomic energy, actually the clauses

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are so worded as to permit the two parties to join efforts in the manufacture of carriers of nuclear charges (Article 1, clause 6). The United States' "sincere" desire to give its partner assistance is shown, too, in that the U.S. is not bound to reveal such information on the use of atomic energy as constitutes an object of private property or was obtained by the United States from another state (Article III). The agreement makes it incumbent on France, in infringement of her sovereignty, to turn over her "surplus" nuclear material to the United States. True, in some cases France is magnanimously permitted to turn over the surplus to other countries, but only after first getting the consent of the United States. Highly indicative are the clauses dealing with control and inspection.

Article X, to begin with, gives the United States the right unilaterally to decide what things in the French economy it will supervise and inspect and to exercise sole supervision through special inspectors.

The bilateral agreements entered into by the United States with other countries are thus unequal. To illustrate: under these agreements those countries are required to give back to the United States the "spent elements", meaning primarily plutonium, which, as everybody knows, is the principal ingredient of the A-bomb, to submit to the United States annual reports on the energy level of the used-up atomic materials, and to give American inspectors free access to keep an eye on the condition of the materials supplied, the functioning of the reactors, and so on. These and other similar conditions, it was admitted by Vice-President Townsend, of the Council for the use of atomic energy in U.S. industry, are designed to perpetuate American control, and to guarantee United States military and economic leadership in the capitalist world. The system of meddling measures provided by the said agreements enables the United States to retard the development in other countries not only of the atomic industry, but also of the entire national economy.

Regional Co-operation

While actively co-operating in peaceful uses of atomic energy on a bilateral basis, the Soviet Union attaches considerable importance also to regional co-operation in this sphere. With the aim of developing such co-operation, a conference of eleven European and Asian countries was held in Moscow in March 1956, on the initiative of the U.S.S.R., at which an agreement was signed to set up an international scientific-research organisation—the Joint Nuclear Research Institute. The institute, established in the town of Dubna, today has twelve member states: Albania, Bulgaria, Hungary, the Democratic Republic of Viet Nam, the German Democratic Republic, the People's Republic of China, the Korean People's Democratic Republic, the Mongolian People's Republic, Poland, Rumania, the U.S.S.R. and Czechoslovakia.

Of exceptional importance for the work of the Joint Institute, was the Soviet Government's decision to turn over to it, as a component part of the Joint Institute, the Institute of Nuclear Problems of the Academy of Sciences of the U.S.S.R., which had a synchrocyclotron with a proton energy of 680 million electron-volts, and the Electro-Physical Institute of the Academy of Sciences, with its proton synchrotron with a rated proton energy of 10,000 million electron-volts. It is the Joint Institute's function to organise co-operation between the scientists of the different countries in theoretical and experimental research for the purpose of extending the possibilities for peaceful uses of atomic energy.

All states signatories to the agreement are equal members of the Joint Institute, taking part in the scientific work and management of the institute on an equal footing, irrespective of the amount they contribute to the maintenance of the institute and to building research units.

The institute is based on the principle of equality of all member countries. Despite the fact that the financial contributions of the member countries differ in accordance with what each can afford (the U.S.S.R. contributing 47.5 per cent, the People's Republic of China 20 per cent, the Korean People's Democratic Republic and Albania each 0.05 per cent, and so on), all members enjoy equal rights. "The financial contribution of the member countries of the institute," says Article VI of the founding agreement, "cannot serve to affect the degree of a particular member country's participation in the scientific work and management of the institute." This principle has not merely been proclaimed; it has been secured legally. The Institute's board of directors is elected by a simple majority vote of the member countries. The elections are held at a special conference called for the purpose, with each member casting one vote. Scientists from any member country are eligible for election to the office of director or deputy director of the institute. Members of the Learned Council are appointed by the countries themselves, with an equal number (up to three) appointed for each country; and the finance committee, which controls all financial activity of the institute, is made up of one representative from each country.

It should be mentioned that the Joint Institute is not a closed group of a few states. The founding agreement distinctly envisages the possibility of other States becoming members. Any state desiring to join has to apply, stating that it assents to the

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principles underlying the agreement and its organisation, and on receiving a favourable vote from the majority of the member countries will become a member of the institute.

The Soviet Union is persistently striving for co-operation in the use of atomic energy for peaceful purposes on a truly regional system basis, including one embracing all the states of Europe. Soviet scientists attending the international conferences in Geneva (1955 and 1958), New York, Moscow, London, Amsterdam, and so on, contributed much to co-operation by scientists of different countries in peaceful uses of atomic energy. The Soviet Union has contributed a great deal to the establishment of the International Atomic Energy Agency, which it regards as an organisation whose function it is, under its charter, to promote and help co-operation in this matter.

Euratom

The Western powers are following a different policy; their line is to set up closed groups made up of some countries belonging to military blocs. A good illustration is the so-called *Euratom*, in which are joined six Western European countries: France, the German Federal Republic, Italy, Belgium, Holland and Luxemburg.

Euratom was set up as a closed group despite the Soviet Union's proposal for all-European co-operation in the use of atomic energy for peaceful purposes. Strictly speaking, Euratom is a combination of governments and monopolies to put Western Europe's atomic industry under the control of the most powerful heavy industry monopolies of the six countries. The very structure of the organisation's managing bodies shows that its members do not enjoy equal rights. For example, under the agreement, the European Atomic Commission, one of the major agencies of Euratom, has been vested with the right to own all fissionable materials and the right to distribute them among the member countries. But the places in the commission are not distributed according to nationality, and its numerical strength rules out obligatory representation of all six countries. The votes in the Euratom Council have been distributed unequally, namely, the G.F.R., France and Italy have four votes each, Belgium and Holland two each, and Luxemburg one.

What stands out here is the "supernational" nature of the organisation; the activity of the managing bodies infringes on its members' sovereign rights. Suffice it to point out that decisions passed by a majority vote of the board or commission must be positively carried out. Any violation of "obligations" under the treaty will bring sanctions either by the commission or by decision of the court set up by Euratom. Article 83 of the Euratom treaty permits such sanctions as deprivation of financial or technical assistance, total or partial withholding of raw material, and so on. Very substantial rights have been given Euratom to inspect and control industry in the member countries, and exercise of the rights provides every possibility for interfering in the internal affairs of any of those countries. Taking advantage of the member countries to whom the United States sells fissionable materials, the American monopolies have succeeded in having the United States given authority to inspect electric stations and to supply them with nuclear fuel.

Although the Euratom members have announced that their union has peaceful aims, they find it hard to conceal the fact that in reality the monopolist combine has been established to serve the military ends of N.A.T.O. Essentially the founding of Euratom is one of the major steps taken to realise N.A.T.O.'s decision to equip the members of this aggressive bloc with nuclear weapons. It is no accident that no distinction is made in the text of the agreement between the use of nuclear fuel for peaceful and military purposes. Adding to the danger to peace is that the agreement has given a free hand for furnishing West Germany with atomic weapons, and has removed even the restrictions imposed by the Paris agreements. Bonn's Defence Minister, Strauss, had this in mind when he stated in August 1959 that the German Federal Republic, too, could be enlisted to manufacture nuclear weapons "if other nations, particularly France, are to make their own H-bombs".

* * *

The use of radio-active substances in different branches of the economy, science and medicine in many countries makes it imperative to take preventive measures to protect the health of the people who have to do with these substances. Today, it is impossible to establish to any degree exactly how many people are exposed directly or indirectly to the danger of irradiation.

However, it must be assumed that they make up a very considerable number in many countries, and jurists should already today give serious attention to working out national and international standards to make sure that the people are protected against atomic radiation.

Measures of Protection

In the Soviet Union the question is getting a lot of attention. Many regulations for the protection of labour, in particular those contained in the codes of labour legislation of the Union Republics, have been made fully applicable to wage and salaried workers whose work involves the use of radio-active substances. Indicating the great importance

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of these regulations is the fact that they have been given special attention in Chapter VII—Labour Protection—in the published draft of Fundamentals of Labour Legislation of the U.S.S.R. and the Union Republics, which contains directive principles. In development of the labour protection standards now in operation in the U.S.S.R., special rules, instructions, and so on, have been issued regulating in detail the measures for preventing injury to the health of the workers. One of these documents is "Sanitary Rules for Work with Radio-active Substances and Sources of Ionising Radiations", adopted June 25th, 1960. The rules apply to laboratories, institutions, enterprises and other organisations of all Ministries and independent offices using, transporting or storing radio-active substances and sources of ionising radiations. Observance of the rules is obligatory in designing, building, re-equipping and operating laboratories, institutions, and installations intended for work with radio-active substances and sources of ionising radiations. The rules contain many and extremely detailed provisions.

Thus, under the rules, no one under the age of eighteen is allowed to work with radio-active substances or sources of ionising radiations. Women have to be relieved of such work for the entire period of pregnancy, and where the work is with open radio-active substances, for the period they suckle the baby, too. Medical examinations are given not less than once in six months, and should the worker's health be found to have been affected as a result of the radio-activity, he is to be temporarily transferred to do other work. For the work on the new job he is paid a wage equal to his average earnings on the old job, and he gets special foods free as before. Those whose job has to do with radio-active substances work only four hours a day, and they get an annual holiday of thirty-six days.

There is strict supervision to make sure that the rules are observed, and the body charged with this task is the state sanitary inspection. The inspectors are persons who are competent in matters of radiation, and for the purpose of getting more qualified advice and consultations scientists specialising in peaceful uses of atomic energy are enlisted in this service.

International Standards Needed

As not all countries, however, have standards for protecting workers against atomic radiation, the working out of international standards has assumed great importance.

The International Labour Conference adopted in June 1960 a number of important documents: a convention and a recommendation respecting the protection of workers against ionising radiation, and a resolution. The work of the I.L.C. over many years has yielded some results, and the documents mentioned above contain highly-valuable clauses, which if properly applied can play no small role in the protection of the workers' health. However, the documents also suffer from substantial defects. For instance, the convention has set sixteen as the minimum age for work where there is danger of ionising radiation; this is too young an age, as radiation constitutes a great danger for the young organism. Besides, all workers, and not just those directly employed on the hazardous jobs, should undergo medical examinations. Then, neither the convention nor the recommendation provides that workers temporarily transferred to other jobs by the doctor's orders should be paid their old wages, and neither do they forbid the employment of pregnant women or nursing mothers in this work, nor even limit their hours. It is absolutely essential to include such standards in international agreements, for their absence substantially diminishes the value of the results of the work of the I.L.C. in the field under consideration.

The I.L.O. should not give up its work in so important a field as the struggle against the danger of atomic radiation, after the convention and recommendation have been accepted. On the contrary, more effort should be put into working out international norms in the shape of standard codes and safety rules designed to protect workers against ionising radiation in the different branches of industry, science and medicine.

* * *

International co-operation in peaceful uses of atomic energy opens up favourable prospects for economic, scientific and cultural development of all countries, but it is only banning the use of nuclear energy for war purposes that will ensure the fullest co-operation of states in this field. The absence of an agreement banning the testing of nuclear weapons and ensuring their elimination is a serious hindrance to switching atomic materials, scientific-research means and other resources from the sphere of means of destruction to that of production of material wealth. Conclusion of agreements for banning nuclear weapons and ending their tests will, therefore, make not only for the elimination of the danger of war, but also for creating the conditions needed for international co-operation in peaceful uses of atomic energy for the welfare of all mankind.

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Australian Working-Class History

Jack Lindsay

AUSTRALIAN history is very little known in Britain, and much of it has yet to be clarified in Australia itself. Yet it has much interest. We may say roughly that Chartism, defeated in Britain, achieved its aims in Australia after the insurrection of the Eureka Stockade, and that Australia was thus the first country in the world to achieve a fully worked-out bourgeois democracy. Of course, the achievement of the Chartist political aims in Australia had different social effects than it would have had in the much more highly developed land of England.

The democracy rapidly built up in Australia had a strong plebeian and working-class element from the outset, but in the situation of a primitive national economy going through quick changes and expansions. As a result, there was a special flavour about the Australian political scene, which, despite many modifications, still exists. And just as there was a fast growth of bourgeois relations in a continent which a few years before had been under autocratic control as a convict settlement, there came about what we may call the "purest" form of capitalist society.

The extremely rapid extension of monopoly-forms of land ownership in virgin territory led to a very simplified form of land law. Owing to the work of Torrens and his registration system, which operated first in South Australia in 1858, simple certificates of title took the place of deeds, and, save for some 7 million acres held under the old common-law title, the Torrens' method was applied to all landholdings. A clean sweep was thus made of all feudal survivals in land. From Australia the method spread to Denmark and Norway, and to the U.S.A. (where the matter was complicated by the objection to legislation encroaching on the judiciary, so that primary registration was made by decree of court).

Again the degree of "pure" capitalism can be seen in banking. Here Australia was far ahead of Europe and the U.S.A. in simplified systems. In the U.S.A., till near the end of the nineteenth century, banks were held fit only to issue notes and discount bills. Restrictions prevented them from normal commercial expansion and they linked up with the trusts, which absorbed a large part of normal banking business. But in Australia there was little legal control. Loan by overdraft displaced bills of exchange, and begot fluidity of exchange at an early date. The branch bank, hated in the U.S.A., was carried on from the Scottish example and facilitated the huge inrush of British capital. The *Australian Encyclopedia* in 1926 could airily declare:

> The Imperial Bank of Germany, in an annual report published during the 1914-18 war thought it worth while to boast of having devised a scheme by which a payment could be made by a person in one town to a person in another by a book entry and letter of advice, without the use of currency or a credit instrument. If there is a banker living in Australia who can remember the time when a proposition of this kind was a problem to be solved, he must be a very old man.

Indeed, the tendency to treat credit finance fluidly can be traced back to the first economic crisis (1923-30) with its struggle between the woolmen and the Government.

The highly-developed capitalist outlook in a wild continent in the first stages of being broken-in had its counterpart in the extreme militancy of the workers and their early realisation of the need to organise. Hence the way in which democracy was achieved and trade unions moved into political activity.

The Australian Labour Movement

There is now available a good single volume which enables the English reader to get at close grips with Australian developments during the second half of the last century, *The Australian Labour Movement, 1850 - 1907*, an anthology of contemporary statements with commentary, published by the Noel Ebbels Memorial Committee in association with the Australian Book Society in 1960. R. N. Ebbels began the work but was, unfortunately, killed in a road accident in 1952; the book has been completed under the editorship of L. G. Churchyard. Ebbels was a fine and impressive person. Born in 1918, he began as an earnest Christian, but became a Communist and had a strong effect on the student world. Professor Manning Clark writes: "To the end his communism was enriched by the charity and compassion he brought to it from his earlier Christ-

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ian phase, just as in every move in his pilgrimage through life, that great stroke of fortune, the innate goodness, conferred a distinction on every group he joined."

This book, then, is a memorial to Ebbels and an important contribution to Australian history. It omits the first sixty-odd years and begins with 1850, when convict transportation to the eastern states finally ended, and the Australian Colonies Government Act was passed. Perhaps the introduction might have stressed more the way in which a land-monopoly had been created, largely through the unscrupulous foresight of MacArthur. The big "squatters" had grabbed the land for the rearing of sheep, in collaboration with the English textiles industry; and this action, which none of the many later legal efforts was ever able to undo, was the major factor determining Australian economic history and the attitudes of the workers. But in order to produce the Australian situation as it developed, another factor was needed—the gold rush of the 1850's. Up to that point the struggle for "rights" had been led by the big graziers against the autocratic government; and their conceptions of rights included in the forefront the power to bring in slave or indentured labour to take the place of the drying-up stream of convict labour. Now, almost overnight, a violent new factor intruded, the unruly gold-miners, many of them Chartists, men of '48, from all over Europe, and rebel Irishmen. They resisted the Government under the cry of "No taxation without representation" and revolted against the licence system. All the plans of the Home Office broke down and a new force had arrived to challenge the squatters.

The instrument of change was the public meeting:

> The great vehicle of progress in the colony, social, political, or religious, is the public meeting. This is a common stage, knowing no monopoly, where individuals of all ranks freely give views on public affairs. The operative classes in general take an active part at these assemblages, and they frequently display more of original and practical thinking than classes of higher training (W. Westgarth, 1857).

The achievements were the introduction of the secret ballot and the rapid extension of the franchise. The first modern ballot law came in Victoria in 1856, and the other Australian colonies followed the example. Not till 1872 did the method appear in England. Next year it arrived in British Columbia and the year after that in Canada; Belgium adopted the ballot in 1877, but the method did not reach the U.S.A. till as late as 1888—then being taken over by Massachusetts, the other states toeing the line during the next fourteen years. By 1893 New South Wales introduced manhood suffrage, one man, one vote, with no property qualifications; in 1902 the provisions were extended to women. In 1894 South Australia adopted universal adult suffrage.

As early as 1859 Labour candidates were put forward. In that year a stonemason was a Labour member in Victoria, and the Ballarat miners got their man in, though he ratted. In 1884 the T.U. Congress urged the creation of a parliamentary party; 1890 Acts provided pay for M.P.s; and as a result of the failure of the great maritime strike of 1890 all the colonies but Tasmania saw Labour Parties formed. Thereafter the Labour Parties played a fast increasing role of importance in Australian politics.

Bourgeois Democracy

I select these few facts to give some idea of the vanguard part taken by Australia, under working-class pressure, in achieving the final forms of bourgeois democracy. The full picture is complex and exciting, and is well brought out in the Ebbels book. On the one hand the class struggle is sharp and naked, and the employers learn from the workers to organise in a big way and to hit back hard. (The Chief Justice in Melbourne was so annoyed by the intransigence of the bosses that he made considerable public contributions to the strikers' funds in 1890! He was an Irishman, and later declined a knighthood.) But there was a heavy lag in the period 1860-90 between the workers' ideas and their militancy in action. A confused mixture of attitudes from pre-1848 Radicalism and Chartism was hardly adequate to the situation. But with the eighties the deepening of the class struggle led to discussions on socialism. There was a welter of influences, ranging from Henry George's *Progress and Poverty* to Bellamy's *Looking Backward* or Gronlund's *Co-operative Commonwealth*, from the works of William Morris to those of the Webbs and Shaw. And many periodicals expressive of the new ferment appeared, the most important being the *Bulletin* (now a sorry reactionary rag) which in its early days had a policy that Francis Adams described as "Republicanism seasoned by socialism, fiscal protection as a means to the first, and ruthless and unscrupulous satires of all authority as a means to the second". William Lane's *Worker* represented a more consistent socialist approach. But there was still much confusion. Opposition to the use of semi-servile coloured labour easily turned into racialism; and though *The Hummer's* famous definition of socialism as "the desire to be mates" was genuinely Australian, it hardly gave much of a political programme. (The first fully clear voice is that of Tom Mann, which is strongly heard after 1905.)

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As part of the development that led to Labour Parties based on close relations with the trade unions, Australia achieved the new unionism ahead of England; and the deep popular emotions that were stirred by these movements are shown by the part played by many poets — Lawson, O'Down, Brady, Adams, Daley. It is of interest that the first person whom Ebbels' book can find as clearly stating the deepening of class antagonisms is the poet Adams in *The Australians*, 1893. The new unions stressed mass-membership, sought to organise as an industry as distinct from a skilled trade; favoured militant policies, the use of paid organisers, democratic control by the rank and file, and strike action where necessary to extend union organisation.

The Australian working class in the period under consideration (1850 - 1907), may then be said to have taken over the political aims of the English working class of the 1840's and carried them to a triumphant conclusion, while the English themselves, caught in a far more complex situation, lagged far behind. The general pioneering background, of course, suggests the U.S.A. far more than Britain, and in Australia, as in the States, strikes have been liable to generate considerable violence. Yet the direction taken there was extremely different from that taken by the American working class.

Trade Union Organisation

Steinbeck's novels, such as *In Dubious Battle* and *The Grapes of Wrath*, show what a tough job it was to organise casual workers such as fruit-pickers in the States of the 1930's; but in Australia the casual workers, the sheep-shearers, drovers, cane-cutters, fruit-pickers, and so on, from the outset, were highly organised and militant. Beyond a doubt the differing land conditions underlay this variation. Whereas the pioneering movement into fresh lands went on long in the States and left all sorts of myths about the possibility of moving on, in Australia the proletariat that began to emerge after the ending of surface-mining, found themselves on all sides confronted by the monopoly control of the best portions of the land. All the legal efforts to build a class of small farmers, free selectors, failed; and the result was the intense militancy of men like the shearers, in their relations to the squatters. Big capital had also rapidly grown up in the mines and shipping, as well as in pastoral companies; from almost the start the new working class had no illusions about class struggle. To meet the situation the workers joined trade unions and the trade unions developed unified forms. In 1874 twelve miners' bodies merged into the Amalgamated Miners' Association of Victoria, later Australasia. By 1886 it had fifty-one branches and more than 13,000 members; it had waged twenty-nine strikes and lost only one. The same year its general secretary helped to organise the shearers of N.S.W. and Victoria; three years later the Amalgamated Shearers' Union had 22,500 members; it later joined forces with the Queensland Shearers (11,000 men); in its first three years it waged 3,180 strikes and forced most of the squatters to recognise it. Similar developments went on among the seamen, dockers, and transport workers. And from 1884 intercolonial T.U.C.s were held almost yearly. The corresponding concentration of forces among the bosses was shown by the union of eighteen steamship companies in 1878, which joined with the Boots Manufacturers Association in Victoria, to set up the nucleus of an Employers' Association in 1879. N.S.W. saw an Employers' Union in 1888. By 1890 the Pastoralists' Unions of the squatters united in a Federal Council.

If we are to put our finger on the moment when a new uncompromising level in the class struggle appeared, we may take January 1886, when the seamen, refusing a demand by the shipowners to help in breaking a strike by the waterside workers, replied as follows: "We are compelled to take this course owing to the struggle having assumed a new phase, viz., Capital *v.* Labor."

The Split in the Movement

And yet, despite its many Labour triumphs and its sustained militancy, the Australian working class have never managed to come anywhere near socialism. The Ebbels book ends just before the outbreak of powerful large-scale strike action—from 1908 on; but the split inside the labour movement had already arrived. Leaders anxious to collaborate with the bourgeoisie were fighting the militants. Thus, in the 1913 gas strike in Sydney, the Labour Premier threatened to bring in scabs if the strikers didn't give in. As a result there has been the long sad story of intrigues, betrayal, splits and confusions, which carries right on into our own day. Despite the socialist enthusiasms of the 1890's, the Labour Parties became entangled with the running of the capitalist state, finding ways to reform and help it forward. Lenin noted, "The Labour Party has had to concern itself with developing and strengthening the country and with creating a central Government. In Australia the Labour Party has done what in other countries was done by the Liberals, namely, it has introduced a uniform customs tariff, a uniform Federation Act, a uniform land tax, and uniform Factory Acts." And so, after having pioneered with the new unionism, the Australian labour forces found themselves breaking new ground with aspects of what we now call the welfare state: for instance, devising forms of arbitration for the damping-down of the class struggle and the elimination of strikes.

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It is a poor sequel for the magnificent start; but we need not fear that it is the last word of the Australian working class. After a period of intense anarcho-syndicalism in 1914-19, the Communist Party was formed in October 1920, and a new force entered the scene. In the post-war years, with their large-scale industrialisation and the extensive immigration of Europeans, often Catholic and anti-communist, the picture has grown highly chequered; but there is no reason to doubt that the traditional militancy and mateship will yet in their own time produce an Australian socialism.

The Ragged Trousered Philanthropists

Jack Mitchell

ROBERT TRESSELL'S *The Ragged Trousered Philanthropists,* written between 1906 and 1910, published in abridged editions in 1914 and 1916 and in full for the first time in 1955, is not only the first important working class novel in the history of English literature but holds a place in the consciousness of the vanguard of the British proletariat and progressive intelligentsia unattained by any of Tressell's working-class and socialist successors over the intervening five decades.

The individual hero of the book is Frank Owen, a socialist worker, who spends all his spare time trying to convert his work-mates to his way of thinking and whose dinner-break lectures on capitalism and socialism, given in the kitchen of "The Cave", as well as providing a brilliantly concrete presentation of the basic principles of Marxism, are closely integrated, through the material dealt with, with the main body of the action and serve as an immensely enriching chorus to this action.

Frank, although respected by his mates as an outstanding craftsman, is something of an outsider as a result of his "queer" ideas, and the unsolved problem of his relationship with the other workers is central to the book. This does not mean, however, that the single figure of Owen is central; that position is held, and for the first time in the history of the novel, by the workers' labour collective—with Owen as one of its integral parts.

This collective is divided into four rough sections. In the first are Crass, the opportunist foreman of petty bourgeois aspiration who carries tales back to "the bloke", and his cronie, Slyme, the religious opportunist, who, under a cloak of pious righteousness, has only one end in life—to feather his own nest at the expense of his work-mates. These two, along with a few of the more *lumpen* of the casual labourers, represent that section of the workers where the drive of the ruling class to division and demoralisation has been completely successful. Crass and Slyme, with their petty bourgeois ambitions and contradictory compound of *herrenvolk* complex and contempt for themselves and their fellow proletarians, are classical ideological representatives of the labour aristocracy in the era of imperialism.

In the next section is the broad mass of the average workers, in whom the struggle between native working class humanism, craft pride and dignity and the drive to demoralisation and alienation rages eternally back and forth. Here the chief characters are Old Jack Linden, Easton and Harlow—though the last is a borderline case—with the next section represented by the single epic figure of Joe Philpot, one of the greatest working class characters in our literature, typical of the finest sections of the non-socialist rank and file. In Joe, though the enemy forces have by no means been driven from the field, the decisive element is that of class solidarity and humanity. Highly class conscious, proud of his creative skill, deeply humorous with the wry, ironical humour of the British worker, Philpot is the salt of the earth. And it is with him that the propaganda of the last section, the socialist vanguard of the proletariat in the persons of Owen and Barrington, has most success.

The one thing that must be emphasised about Owen is his underlying continuity with the other workers; all the best qualities latent in the collective reach their highest and most conscious form in the socialist Owen. All these various sections and individuals contribute to one organic, complete image of the working class with special reference to its *consciousness* in the

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era of imperialism, the balance of forces within that consciousness, the struggle by the two main forces for that consciousness.

As can be seen from the above this novel has certain unique features differentiating it from all other classical proletarian-socialist novels of international significance. Many of the established pre-conditions for socialist realism are apparently broken. The basic material would seem at first sight to be unpromising—a small-scale artisan collective in a non-industrial town in the south of England; there is no "plot" in the sense of the usual story thread, no marked developments in any of the characters, the picture is apparently static, no depiction of the workers in organised struggle with their exploiters, not even *explicit* admittance of the need for such organised struggle, nor, therefore, for the formation of a revolutionary party of a new type to lead it; and then, throughout, Tressell maintains a bitter satirical distance in his comments on the workers.

Yet the paradox is that in the estimation of the class conscious British worker it stands head and shoulders above any other working class novel be it British, American, Russian or what you will.

What was new about *The Ragged Trousered Philanthropists* when it first appeared?

There were two great periods of popular literary activity in the nineteenth century: that connected with Chartism in the 1840's and that connected with the rebirth of socialism in the eighties. Both periods produced writers of imaginative prose dealing with the contemporary working class movement—Ernest Jones and Thomas Martin Wheeler for example, in the era of Chartism, and Margaret Harkness, Constance Howell, H. J. Bramsbury among others, in the 'eighties. Wheeler and Bramsbury were themselves proletarians. Wheeler's novel *Sunshine and Shadows* (1849-50)[1] and especially Bramsbury's *A Working Class Tragedy* (1888-9)[2] can in our sense be looked upon as the direct ancestors of *The Ragged Trousered Philanthropists*.

Pioneer Working-class Novelists

These writers deserve great credit as pioneers. Their historical contribution should not be under-estimated; they democratised the subject-matter of the novel by putting the proletariat in the centre of the picture; their heroes were chosen exclusively from the workers, peasants or progressive intellectuals; they made the revolutionary struggle of the masses their main subject; they told the truth, as far as they could, about class relationships in Victorian society at a time when the "official" school of novelists was tending more and more to falsify these relationships; they preserved the panoramic type of social canvas characteristic of the great popular democratic tradition at a time when the bourgeois novelists had abandoned this; they established the realistic method (in the 'eighties) as the most efficient artistic method for uncovering the objective laws underlying social reality at a time when the first general attack on realism which has been characteristic of the twentieth century was already being launched from the bourgeois camp. Last but not least, also in the 'eighties, they introduced socialism into literature as a theme and as the future ideal.

Yet in spite of all this, these writers not only failed to break the bounds of critical realism, in artistic achievement they lagged far behind the "high" critical realists of their day—the Thomas Hardys, Merediths etc. The reasons for this are, of course, extremely complex, but generally speaking, we can say that their grasp of the unique, *positive* nature of working-class reality was not yet deep enough, not yet able to replace with a new confidence in proletarian existence as a fully-fledged *way of life*, the old, deeply confident optimism of the *people* that they and they alone were practising human life *in toto*, a confidence which impelled them to give spontaneous expression in their art to the *whole* of their existence, the repellent and the beautiful being mutually supporting. The working class, it would seem, was not yet in a strong enough position as far as consciousness of itself was concerned to be able to indulge in constructive satire at its own expense, to practise self-criticism. The work of the socialist and other novelists of the proletariat in the nineteenth century lacks this strategic self-confidence.

Reality is not deeply enough digested, their art is too defensive, too *tactical*, still too much a reflex action to local stimulus and events and therefore liable to complete collapse when this stimulus was removed (1850 and 1890). They describe working-class existence at the public "official" level, i.e. those phenomena *directly* adjacent to the fact of exploitation and the class-struggle—starvation, destitution, sackings, demonstrations, police attacks etc. The workers in their books are always at the existence level and this existence is an unremitting purgatory on earth which should be done away with *lock, stock and barrel* at the earliest opportunity. The unique, positive,

[1] *The Northern Star*
[2] *Justice*

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permanent, creative, revolutionary characteristics peculiar in their partly developed form to proletarian living *even under capitalist production relationships*, are not sufficiently expressed.

This failure to penetrate into spheres of living in an indirect relationship with the class struggle, into the "private" and inner lives of the characters, inevitably means that these characters cannot be fully individualised; in fact they remain at the level of social-political types differentiated from each other exclusively by statements of their conscious, ideological standpoints. Thus these writers can make no use of the rich and varied assortment of tools and artistic methods devised in the course of their long experience by the great democratic realists largely for the very purpose of such a subtle individualisation. The single, almost universal method is that of a straightforward descriptive narrative. In a word, the thinness and lack of inventiveness and originality in their artistic technique corresponds to their, as yet, relatively superficial grasp of the true nature of working-class reality. Under these conditions there could be no question of a successful expression of the new level of the popular sensibility[1] which demands as its basis a profound grasp of the immense richness, *contradictoriness* and dynamism of popular living.

First Break-through

Tressell's *Ragged Trousered Philanthropists* is the point in history where the new stage, the *proletarian sensibility*, makes its first sustained appearance in our literature. Tressell takes up the popular tradition where Dickens left it.

Seen in an international perspective, Tressell's novel appears as part of the first general breakthrough of the proletariat into the large-scale literary spheres; within a few short years of each other were written the epoch-making masterpieces of Gorki, Jack London, Martin Anderson Nexo and Robert Tressell. The reason why the international working class achieved the profound level of consciousness of its place and role in the world necessary for the production of major novels (the most *strategic* and analytical form of imaginative writing) just at this point in history are of course extremely complex. Certain it is that by the turn of the century the all-embracing body of proletarian world theory which had been in the process of creation since 1848 had had time to react back on working-class reality with incalculably profound effect, that in these years, simultaneously with the entry of "matured" imperialism into its state of general crisis and the resulting tremendous stepping-up of the bourgeoisie's attack on the living standards of the masses and the drive towards war, the international working-class movement entered into its revolutionary phase, a phase expressed by such diverse phenomena as the formation of the I.W.W. in the U.S.A., the Labour Party in Britain and above all by the formation in Russia of the Bolsheviki and the 1905 Revolution in that country. In a word, with the entry of capitalism into its final stage came the final maturing of the revolutionary proletariat. Thus it should be emphasised that, unlike the old popular sensibility or point of view, the mature working-class point of view has as its understood central core a deeply digested scientific world outlook—Marxism—but is not identical in boundaries to this highly conscious class ideology, being a wider and looser concept, determining the quality of a worker's apprehension of reality down to the very finger-tips of experience.

The Ragged Trousered Philanthropists is the first *strategic* working-class novel in our history. Here the panoramic breadth is matched for the first time by a corresponding penetration into the interior of working-class life. The proletariat in its revolutionary stage is deeply impregnated with the conviction that the working-class way of life is a valid human society, in fact the society encompassing all aspects of really human living. The other society, that of the ruling class, is automatically put beyond consideration as a human way of life, a society of biological and moral monstrosities, and is only of interest in so far as it hinders the working class from free development. With this supreme offensive confidence in their historic mission, the common people through Tressell can for the first time since Dickens look themselves full in the face and depict *everything*—Tressell is the first since Dickens who, as Arnold Kettle says of Dickens, "looks degradation in the face and sees humanity there". In saying he looks degradation in the face I do not mean primarily the degradation of the workers' physical conditions of life, *though imperialism in its death throes is quite capable of thrusting the people at any time into even more desperate straits than those in the "Philanthropists"*. However, as regards the physical conditions of life of the workers in Britain there has been considerable improvement since Tressell's day, and if Tressell's validity depended *solely* on the typicality of his picture at this level he would perhaps be, as that condescending Tressell "expert" Frank Swinnerton hopefully pronounces, now mainly of historical interest. It is about another degradation that Tressell

[1] Comrade Arnold Kettle has considered and developed in a Marxist context this conception of "popular sensibility," in his as yet unpublished work on Dickens.

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tells his uncompromising truth—the degradation of *political consciousness.*

Organisation and Consciousness

We have said that the final "ripening" of imperialism which took place in the first years of the century brought with it the final maturing of the international proletariat; seen on the British scale at least it also brought with it, however, the maturing of *the problem which remains the central stumbling block facing the Labour movement,* to this day—that is the crippling gap between the truly splendid working-class organisational machine which has been built up in the course of the struggle in Britain and is the envy of the labour movements in almost every other capitalist country, and the low general level of clear political consciousness among the masses of the workers, a level that lags behind that of the French or Italian worker for instance. It has often been remarked that until this gap is closed there can be no question of a socialist revolution in Britain. With unparalleled honesty Tressell makes a study of this, in his day, newly matured problem of consciousness central to his whole portrait. In the composite, detailed image of the state of average consciousness represented by the various characters I have mentioned, in ironically contrasting the illusions injected into the workers with reality, in showing with self-torturing honesty the uphill struggle of the new ideology against the old in Owen's struggle to win his mates for revolutionary socialism, Tressell is the first to present this perennial problem in its classical terms (always keeping in mind that since then there has been a huge absolute improvement in the level of political consciousness) and in doing so is making such an important historical contribution that his ignoring of the tremendous *organisational* activity of his era was not disastrous, though it has been in writers standing at a later point in history.

Thus *The Ragged-Trousered Philanthropists* seems to me to have been accepted by the British workers as they have accepted no other novel, *to have been an inspiration to them above all at* points of highest revolutionary activity such as the Clyde in 1916, *firstly,* because it tells them more of the truth about the tremendous difficulties facing them than any other novel has done, because Tressell does not shy away from or oversimplify this central obstacle in their path.

Reading *The Ragged Trousered Philanthropists* on the other hand we realise more fully than from any other work of imaginative literature why in 1961 we have had no socialist revolution in Britain—*yet*!

"Yet" is the operative word. A one-sided presentation of the classical weakness of the British worker could not by itself account for the inspiration to struggle which is the *Philanthropists.* Tressell, with his profound working-class point of view, was able to pick out from among this imperialist degradation the one human force which would grapple with it and finally defeat it. At the conscious, organised level, this force is represented by Frank Owen's socialism. Owen is the break-through of the working-class hero in our literature; he is the old, uncompromising, dedicated English puritan hero, Mr. Christian, become a revolutionary socialist worker.

Tressell's Collective

But here I would like to concentrate rather on the nature of Tressell's workers' collective as a whole. Owen is basically no different from the other decent workers; he has the same qualities as they, only more developed, more conscious—this is his socialism. It is the way that Tressell sees and expresses the two opposing forces at grips in the every-day living of the workers' collective that I would like to say something about. As no one else has done, Tressell unbares the revolutionary dynamism involved in the day-to-day relationship of the workers to their material environment. We see how continuously the working-class collective defies all the efforts of the ruling class to keep its members living at the mere existence level, how the workers continually break the bounds the ruling class seek to set upon them and turn the very instruments of oppression to their own use, into vessels expressing their irrepressible living. Tressell unbares the class struggle at its most elemental, subtly-distilled level.

Central to this depiction of the class struggle, and the clearest expression of Tressell's working-class sensibility, are the scenes of the actual labour process. For the first time in the English realist novel the labour process, in particular, man's relationship to his labour, is part of the central problem. Descriptions of the labour process had constituted moments in the work of certain of the critical realists, for instance in Mrs. Gaskell and especially in the later work of Thomas Hardy, but Tressell's book is a revolutionary step in being the first novel where the natural attitude of the bourgeois critical realists *and the earlier working-class critical realists* that life only begins where work ends is not only rejected, but reversed—without work and a healthy relation to it there can be no beginning to real human life.

The one characteristic of capitalism (heightened tremendously in the imperialist stage) which more than any other condemns it in the eyes of Tres-

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sell the worker is its drive toward the alienation of man from his labour; the decisive touchstone throughout of a character's humanity or anti-humanity is his attitude to labour. Labour means nothing to Rushton, Sweater and other bosses except as a means to hard cash. It is this lack of a natural human relationship with the labour process which more than anything else disqualifies them from the title of human being. Among the workers themselves, the men who have capitulated to alienation—Crass, Slyme and some of the labourers—are the very ones who show the least humanity in all other spheres, betray and trick their mates, toady to the bosses etc.

In all the decent workers, a life and death struggle goes on from which their healthy relationship to their labour comes out damaged but still basically intact. It is significantly the socialist and humanist Owen who most consciously takes this annihilating material environment, this central tool of capitalist oppression and turns it into a vessel of his creative proletarian living. Sweater and Hunter want the drawing-room of the "Cave" painted in the moorish style; their tool to get this done is the craftsman-painter Owen. Owen sees this job from a completely different point of view, however—for him it is a heaven-sent chance to really express for once his humanity through his work. In the struggle that ensues over how the work should be done, what materials should be used etc., it is Owen who wins a whole series of victories over the bosses. Despite the fact that it is the bosses who live in the room afterwards, in the process of creation, Owen the socialist goes over to the offensive and reaches his fullest humanity; for that period the bosses lose control of him and of the whole situation.

Creative Labour

In his attitude to creative labour as man's most important expression of his humanity, Tressell shows himself most clearly as the means of realising in practice a theoretical tradition of which that great socialist artist and pioneer, William Morris, had been the previous stage. Tressell was steeped in the theoretical and imaginative work of his great predecessor and in the sphere of aesthetics and general socialist ideology can be said to be his direct descendant. If you compare, for instance, Owen's "Oblong" lecture, with its, to our eyes, somewhat idiosyncratic proportion of unproductive to productive workers, with Morris's pamphlet, *Useful Work Versus Useless Toil*, the first will be seen to be nothing more nor less than a dramatisation of the second. In fact, Tressell's whole book is in a sense a dramatic illustration of Morris's basic theory on art, human labour and society, the final realisation of this theory in terms of fully realistic art, something which Morris himself, because of his social and historical position, was never able to achieve.

In reintroducing the labour process as a legitimate subject for art Tressell is introducing an element which points far into the future of socialist and communist culture. In the *new* classless society the tremendous social conflicts and the highly charged personal conflicts arising out of them which form the main basis for art in a class society will no longer exist. No one can predict in any detail what the new content of art will be under communism, but one thing is sure—the struggle and harmony between man and his material, natural environment will occupy an important place once more. Tressell's *Ragged Trousered Philanthropists* is a herald of this. Strangely enough in our socialist literature there has been no real successor to Tressell in this. In our later writers the labour process has for the most part appeared only as the background to social-political struggle. The one exception is James Aldridge whose probing of the relationship between man and his labour is one reason why his work has more depth than perhaps any other socialist novelist in our history with the exception of Tressell and Lewis Grassic Gibbon.

Class Struggle

If the scenes of the labour process are the central ones expressing the exclusive humanity of the workers, their revolutionary modifying relationship to their every-day reality, the elemental class struggle for the control of the workers' everyday living, between the workers resurgent and the bosses repressive, the characteristic of the workers of taking hold of the very instruments used to de-humanise them and turning them to their own purposes, they are by no means the only ones. This struggle and eternal partial victory of the workers underlies many of the best sections of the book.

Take for instance the scene in the pub called "Filling the Tank". Here the pub is presented to us first and foremost as one more weapon in the armoury of the ruling class for controlling the lives of the workers away from the point of production, in their "private" lives, a weapon to utilise the workers' urge for relaxation and amusement for the general policy of keeping them at the just-human-not-quite-human existence level, and milking them of what pitiful wages they do get. Everything to do with the pub is shown as being bent to this one end, from the greasy, two-faced landlord, through the bar-

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room "amusements"—hooks and rings and shove ha'penny, to the watery beer and besawdusted and spittooned surroundings.

And in general the scene shows the success of this role of the pub, yet for a certain time in the middle of the scene where Tressell describes the game of rings and shove-ha'penny between the Semi-Drunk and the Besotten Wretch the critical-negative distance is temporarily suspended and we become completely identified, through the author's working-class sensibility, with the emotions of the players and the audience. We become gripped by the duel of skill; and the ability of the Besotten Wretch to conquer his socially imposed physical and mental degradation sufficiently to excel at these two games, while containing a strong ironical element, appears to us at the same time as a victory of humanity in turning the most unpromising environment to positive purpose. In these pages we and the workers take charge of the pub and really begin to enjoy ourselves; for a time the initiative slips from the bosses and their instrument becomes the instrument of the workers in their drive to live at their own terms.

It is the human qualities of resilience, adaptability, creative improvisation, ingenuity and craft-pride born of long tradition which come through most strongly throughout the book. These qualities, though characteristic of the working class in general are above all the traditional hall-mark of the British proletariat. We are often told how the British bourgeoisie is the most experienced, resourceful, flexible and "practical" in the world, less often remarked is the fact that in the course of their long struggle with this bourgeoisie the British working class have developed qualities, strengths, which meet those of the bourgeoisie point for point.

Thus, while Tressell's book is very much world literature because he is picturing a type of class relationship and a condition of the working class, which, with local differences, became general to every highly developed capitalist country in the era of imperialism, while the book is thus international, it is at the same time deeply national. With unapproached honesty and subtlety Tressell portrays not only the classical weakness of the British workers, but also their classical strength. In this way an unparalleled national-epic image of the British proletariat is created. *It is in advancing the proletariat into literature at this profound, strategic level and in giving this rich, revolutionary grasp of working-class reality adequate expression by taking over the artistic heritage of the great critical realist tradition from Swift to Dickens and remoulding this heritage to the needs of the new class that I see Tressell's decisive contribution to the founding of a socialist working-class culture in Britain and to establishing the basic conditions for the development of socialist realism in our literature.*

With *The Ragged Trousered Philanthropists* we have for the first time in our imaginative literature the whole truth about the nature of the relationship existing between the classes. By 1906, with the profound change from the "captains of industry" capitalism to monopoly imperialism which had taken place in the last quarter of the nineteenth century, a great working-class realist of the calibre of Tressell could no longer accept the old type of plot, and, indeed, one of the most astonishing things about this novel is how the whole old plot fabric goes by the board in one sweep. There are no pontoons of personal, human relationships across the gulf between the classes, no personal "story" is allowed to grow up between members of the opposed classes; throughout they stand face to face across the chasm and the only pontoons which are thrown out are those of money. In thus freeing the novel from the old type of plot Tressell was making a revolutionary contribution to the genre's ability to portray typical characters in typical circumstances throughout its total length, to the development of a collective hero, and thus to the foundation of socialist realism in the English novel. It should not be assumed from this that the pictures of the two classes exist independently of each other in the book. The continual ironical contrasting of the life and behaviour of the bosses and workers is one of the main sources of the epic completeness of Tressell's picture of society in general, and the working class in particular.

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Discussion Contribution

On How Did Man Originate?

Karl Sacher

IN the February issue of *Marxism Today* John Lewis launched an unusually violent attack on my article "How Did Man Originate?" published by the same review in November 1960. Therefore I beg to be allowed to reply to his attack.

1. Lewis regards it as "sectarianism" when the author of the article under attack states that "the Soviet anthropologists, students of extinct forms of life, and ethnographers who base themselves on Engels have a far more solid picture of the origin of man than those of their colleagues who are cramped by bourgeois ideology". For, according to Lewis, it is not justifiable to oppose Marxist science, as a "superior category", to "bourgeois science" (he places these words in inverted commas, because he doubts that science in capitalist countries is influenced by bourgeois ideology). It is, of course, obvious that the positive facts which are brought to light by scientific research and the practical progress due to them are valid in the same way for all countries. Yet it is impossible to separate these achievements from their social pre-conditions and from their philosophical consequences, as they are very closely connected with the ideology of those who made them. In his recently published work *Die Natur im Weltbild der Wissenschaft* (Globus Verlag, Vienna, 1960), which Prof. Dr. Needham acknowledged as "a history of contemporary scientific thinking", the Austrian Marxist, Prof. Dr. Walter Hollitscher, proves conclusively that the development of natural science is directly or indirectly influenced by the ruling class—favourably or unfavourably—according to whether it is a progressive or a reactionary class. Similar views were voiced some time ago in the review *Modern Quarterly*, of which Dr. John Lewis was then chief editor. Prof. Dr. Bernal wrote, for instance: "Now, of course, it is a commonplace to say that science is intrinsically politically neutral, that the facts are facts whoever discovers them and for whatever reason, but the history of science shows us that this is only true in the detailed tactics of science. The interrelations between the facts, the significance of the facts and the possible utilisation for controlling nature depend on the theories of science. These in turn draw on philosophical and religious traditions. . . ." (Vol. 4, No. 5, 1949.)

2. Lewis maintains that the author of the article under attack "gives the results of Soviet research workers as if they alone had reached conclusions which are, as a matter of fact, generally accepted". However, the article really reads that the Soviet scientists "all stand firmly on the point of view represented by many bourgeois scientists like A. Hrdlicka and H. Weinert and fought against by many prominent anthropologists like H. F. Osborn and A. Keith, of the existence of a Neanderthal-stage of the development of humanity". By the way, this point of view, in the opinion of Soviet experts, was not refuted by the important discoveries made in the last three decades in capitalist countries (and in the Soviet Union, in China and other socialist countries likewise), although many scientists in the West—including LeGros Clark, whose great merits are incontestable—believe that it was. But it was not the task of my article to go into the details of that controversy, and this is not the place to do it either.

3. Unfortunately, John Lewis does not anywhere write to the point, nor does he really deal with the contents of the article. Instead, he confines himself to the accusation—unproved and proving nothing—that the author does not know this or that publication since it is not quoted by him. Actually, I quote precisely those works that I need for my presentation in the given case, which, after all, is what every author does. While it is a rather strange method to deduce ignorance from silence, one should, indeed, be expected to know the things one refers to explicitly. As to Lewis's remark concerning T. D. Lysenko, for instance, the "severe criticisms" started in 1952 (that is in the very "period" to which Lewis alludes at the beginning of his statement), whereas "recently" (in 1959, to be more correct) the Academy of Science of the U.S.S.R. strongly disapproved the unrestrained and unqualified attacks on Lysenko (cf. *Pravda*, January 21st, 1959, and March 27th, 1959). Yet, what seems more important to me, C. H. Waddington's *Strategy of Genes* mentioned by Lewis is just one of the many examples proving the fact that the so-called "classical" gene theory is being dropped bit by bit by its former staunch adherents, while Michurin's teachings begin to make headway in the West, too (cf. Alan G. Morton's article in *Marxism Today*, May 1959).

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